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REPORT RESUMES

ED 015 491 72 CG 000 920
ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS AND TRAINING FOR IT.
PROJECT REPORT.
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NATIONAL INST. OF EDUCATION, NEW DELHI (INDIA)
REPORT NUMBER NIE-HEW-PROJ-002 PUB DATE 66
CONTRACT OEC-4-21-002
EDRS PRICE MF-$1.25 HC-$12.28 305P.

DESCRIPTORS- *ACHIEVEMENT TESTS, *MOTIVATION, *SECONDARY SCHOOL STUDENTS, *PSYCHOLOGICAL TESTS, LOW ACHIEVERS, *EDUCATIONAL RESEARCH, EXPERIMENTAL PROGRAMS, SOCIOECONOMIC INFLUENCES, SOCIOECONOMIC STATUS, ACADEMIC PERFORMANCE, CORRELATION, RELIABILITY, DELHI, INDIA, ACHIEVEMENT MOTIVATION INVENTORY, THEMATIC APPERCEPTION TEST

IN DELHI, INDIA, TWO STUDIES WERE MADE OF ACHIEVEMENT MOTIVATION (N ACH). IN THE FIRST STUDY, 1,000 IX CLASS BOYS IN SECONDARY SCHOOLS WERE GIVEN A THEMATIC APPERCEPTIVE MEASURE OF N ACH AND AN ACHIEVEMENT MOTIVATION INVENTORY. THE RESULTS AND LIMITATIONS OF THE STUDY ARE DISCUSSED, AND SUGGESTIONS FOR FURTHER RESEARCH ARE MADE. THE SECOND STUDY TESTED THE EFFECT OF TWO MOTIVATION TRAINING PROGRAMS FOR TEACHERS ON N ACH, AND ACADEMIC ASPIRATION LEVELS IN PUPILS. AFTER THE TEACHER TRAINING PROGRAMS WERE COMPLETED, GROUPS OF BOYS COMPLETED A COURSE TO RAISE THEIR ASPIRATIONS, A COURSE TO RAISE THEIR N ACH, BOTH OF THESE, OR NEITHER. RESULTS INDICATED--(1) THE ASPIRATION BOOSTING PROGRAM ALONE DID NOT AFFECT N ACH, AND (2) THE BOYS HAVING BOTH COURSES SHOWED THE GREATEST CHANGE IN N ACH. LIMITATIONS TO THE STUDY ARE (1) VARYING AMOUNTS OF THE CURRICULUM WERE COVERED IN DIFFERENT SCHOOLS, (2) TEACHERS' TECHNIQUES VARIED IN EFFECTIVENESS. FUTURE STUDIES WILL SHOW IF THE IMPACT OF THE N ACH PROGRAM INCREASES WITH TIME, AND IF BOYS OF LOW SOCIOECONOMIC STATUS NOW VALUE EDUCATION MORE THAN BOYS OF MIDDLE AND HIGH SOCIOECONOMIC STATUS. (PR)

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NIE-HEW PROJECT NO.002
ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS AND TRAINING FOR IT

(Project Report)

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ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS AND TRAINING FOR IT

(PROJECT Report)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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NIE HEW PROJECT 002
DEPARTMENT OF PSYCHOLOGICAL FOUNDATIONS,
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING
1966

CG 000 920

STUDY ONE
ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS

STUDY TWO
EXPERIMENTING WITH MOTIVATION TRAINING

PRAYAG MEHTA

NIE HEW PROJECT 002

DEPARTMENT OF PSYCHOLOGICAL FOUNDATIONS,
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

PREFACE

The concept of motivation has great importance in understanding human behaviour as well as in changing it. But it is also a difficult concept. Although, historically, the study of motivation goes back to the early years of this century, it become popular with the work of McDougall and Freud. It acquired a central position with the development of the theories of learning at a later date. With the application of psychology in the fields of education and industry, it became evident the motivation is crucial in teaching, learning and for that matter in doing any work at a standard of excellence. However, inspite of the popularity of the theories of motivation not much conceptual clarity was obtained until McClelland published his book on Achievement Motive in 1953. By writing this book, McClelland not only indicated a method of identifying one particular motive, but raised the problems clearly in developing a theory and a method of measurement of motives. It is perhaps not an accident that McClelland identified the achievement motive and developed a method of measuring it. The historical circumstances and the social situation after the last war perhaps demanded an emphasis on achievement motive. In fact McClelland himself pointed out soon the role of this motive in the development of society and particularly of economic development. This book of McClalland, called the Achieving Society, has since received much greater attention than his earlier work.

It was in 1963, two years after the publication of McClelland's Achieving Society, that a proposal was placed before the Council for studying achievement motive in our school boys with a view to understanding its role in scholastic achievement. We have been concerned with the large incidence of failure in secondary school examinations and with the sub-standard performance in general. Part of this is perhaps due to a low level of motivation. Accordingly, it was proposed that we may try to find out the relationship between achievement motive and examinations and study the achievement motive in the context of our culture. It was also proposed that we may try to develop a method of training achievement motivation in teachers and see whether such training increases the level of achievement motive in the pupils and thereby influence the pupils' behaviour in the matter of scholastic performance. This proposal was accepted by the Council and U.S. Department of Health, Education and Welfare. The report presented here by Dr. Prayag Mehta, the Principal Investigator, tells the story of this work. Soon after 1961 when McClelland published his Achieving Society, anumber of studies have been conducted in this area. But in the field of education ours is a pioneering venture.

Two studies are reported here. The first study describes the development of a test of achievement motivation on the lines of McClalland's work. It is a projective technique which has been used. Using this technique an assessment of the level of this motivation in secondary school boys in Delhi has been attempted. An assessment of the level of achievement motivation in absolute terms is difficult. It is difficult also to compare the findings of our study with those done in other countries because of differences in sampling procedure and in the technique of testing. Making adjustments for these differences, it is interesting to note that the achievement motivation in our school boys compares favourably with those in some advanced countries. In the first study, one also finds some of the cultural facts of achievement motivation, like its being higher in the relatively lower socio-economic group than in the middle and its relation with certain kinds of occupations. Such findings raise further questions about how our children are brought up in different strata or classes of society. The first study also gives the relationship of achievement motivation with examination results. It is again interesting to note that the correlations are not high. But some of these seem to compare favourably with the correlations of intelligence tests with examination marks. The contribution of achievement motivation to learning is, however, neither proved nor disproved. The results point to the need for further investigation. In the second study of the report the results of our experiment with training teachers in achievement motivation and its resultant effects on students' motivation and their perfomance have been presented. It should be of interest to teacher educators to note that the teachers' level of achievement motivation can be raised by suiable training and that teachers like this training very much. Though there is evidence that as a result of such training the performance of students under these teachers seems to improve, it is not conclusive. The study should now be replicated in another state. The factors contributing to the improvement in the students' performance could have been, among other things, more than just achievement motive. It is, however, a matter of great satisfaction that a State Government, the Government of Rajasthan in the present case, could accept the idea of a scientific experiment in their schools. We shall like to place on record our deep sense of gratitude for the excellent conditions provided to us for conducting the experiment reported in part 2 and for creating the necessary climate which was so very essential in enlisting the cooperation of schools and teachers.

It had required a lot of painstaking work, planning, organisation and motivation on the part of the research team. Though not visualised in the original plan they did many more things out of sheer interest in the work, like the development of an objective test of achievement motivation, about which also we will find interesting results in the report. It is with pleasure that I record my appreciation of the efforts of the research team including Dr. Prayag Mehta, the Principal Investigator, Shri K. Kumar, Shri Bal Ram Shama and Shri H.M. Kanade.

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Dated: April 17, 1967.

Acknowledgements

The Principal Investigator and author wishes to acknowledge the contributions of several persons toward the development of research under report. He is particularly indebted to Dr. S.K. Mitra, who first proposed this research and later provided it his solid administrative and academic support and guidance. Dr. Mitra made numerous suggestions which have been incorporated in these reports. Shri Kuldip Kumar, Shri Bal Ram Sharma and Shri H.M. Kanade were associated as Project Staff, with all phases of both parts of the research under report. The fruitful completion of the present work owes much to their competent and invaluable assistance.

Shri S.C. Gupta and Shri A.C. Sogani carefully handled the calculations. Shri M.B. Golhar planned and processed a part of the data, at Kanpur, through the kind courtesy of the Director, Computer Centre, Indian Institute of Technology. A part of the data were processed at the Computer Centre of the Department of Social Relations, Harvard University, Cambridge, U.S.A. Special thanks are due to Prof. David C. McClelland, who made the funds available and to David G. Winter and Harry Lasker who planned and processed the data.

Shri Vinod Kumar helped maintain and run the project office, throughout. He alongwith R.P. Grover in the earlier part and with Shri M.L. Grover later, efficiently carried the heavy secretarial and typing load.

The Survey was carried out on IX class boys of 32 Higher Secondary Schools of Delhi. The experiments were carried out on IX class boys of seven higher secondary schools at Jaipur. The investigations were made possible by the ready co-operation of the respective Directors of Education, the officials of the Department of Education and the concerned principals, teachers and above all the boys. Thanks are specially due to the seven school principals at Jaipur, and those teachers who were trained during the experiments and who enthusiastically carried out the four month programmes in their respective class-rooms.

The responsibility for what ever has been reported alongwith any possible shortcomings, rests solely with the Principal Investigator and author.

STUDY ONE

ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS

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STUDY ONE

CHAPTER I

INTRODUCTION

What kind of ideas occupy the mind of a young high school boy? What are his concerns? He may be concerned with making and retaining friendship with other boys and girls; a desire to become monitor of his class or captain of the football team; seeking reward and approval of his teachers or parents. He may also be concerned with the desire of improving his performance at school, desire to get a good grade or a desire to become engineer and so on. The concerns, such as the above, indicate motives. For example, the above concerns respectively indicate Affiliation, Sex, power, Approval and Achievement motives. The present investigation was designed to measure the level of achievement motive (written also as n Achievement or n Ach) in high school boys.

Crandall (1963), after an extensive review of research, has observed that researches in child psychology concerning achievement as dispositional or behavioural system as compared to many other areas, is still in its infancy. Research pertaining to achievement and abilities has been there from the inception, whereas enquiries into motivational component of children's achievement behaviour and the antecedents of these are just beginning.

Work on achievement motive is of a recent origin. Psycholgists have been interested in experimental analysis of animal learning ever since Darwin's Theory of Evolution. Not till 1940s, the problem of measuring human motivation and experimental and conceptual analysis of the problem of motivation was taken up. The work initiated by McClelland and co-workers (1948) on Achievement motivation and those by S-R theoriests led to a combination of the study of individual differences with the studies on the processes of motivation. The first major report of the experimental work on measurement of human motivation, particularly the achievement motive, appeared in 1953 (McClelland et al, 1935). Atkinson (1958) later idited further research employing thematic apperception as the technique of measurement of himan motivation. McClelland (1961) further reported some interesting research on Achievement motive and economic development.

McClalland and his associates (1953) adapted Murry's TAT technique (1956) for the measurement of human motivation. Certain pictures are used to obtain stories from the concerned subjects for analysis of their motivation. Stories obtained for the purpose of the measurement of achievement motivation are scores in a particular way, following a scoring system developed by McClelland and his associates (1953). This has been presented in a manual form by Feld and Smith (1958) Some illustrative stories obtained in the present study are shown in Appendix VII Achievement Imagery.

The stories written in response to the TAT type pictures are first scores for Achievement Imagery (McClelland et al, 1963; pp 110-115) on any one of the following three criteria: 1) Success in competition with some standard of excellence. "It is present in a story when the goal of some individual in the story is to be successful in terms of competition with some standard of excellence.

2) Unique Accomplishment "One of the character is involved in accomplishing other than a run of the mill daily task which will mark him as a person success. Inventions, artistic creation and other extra-ordinary accomplishments fulfil this criterion". 3) Long Term Involvement "One of the characters is involved in attaining of a long term achievement goal being the success in life, becoming an machinist, doctor, lawyer, successful businessman and soforth". Such stories, i.e. those which possess AI are scores further for sub-categories.

Doubtful Achievement Imagery and Unrelated Imagery

Stories containing some reference to achievement but which fail to meet one of the three criteria for achievement imagery are scores doubtful achievement imagery (TI). Stories in which there is no reference to Achievement goal scores unrelated imagery (UI). The TI and UI stories are not scores further for sub-categories.

Study Motive:

The achievement motive is being studied both in relation to economic growth (research reported in McClelland, 1961) and academic performance (several studies in McClelland, et al, 1953 and Atkinson, 1958). Several psychologists in USSR have been engaged in research on "Study motives", The studies such as "Bazhovich's work on attitudes towards studies (1962); psychological analysis of grades as motive of the study activity of a school child (1962) and Badalev's woik (1955) on the formation of exactingness toward onself in school children are some examples of growing research in this area in U.S.S.R. These studies highlight the importance of formation of 'exactingness' (or standards of excellent) in the developing of proper study motivation in children.

Kagan and Howard (1962) have summarized researches showing the importance of mastery behaviour in general development of a child and his personality. Flanagan (1964) in a recent review of researches and their implications for improvement of secondary education has pointed cut the basic motivating factors leading man to work long hours under unsatisfactory conditions are related not to good pay, job security, good supervisor or good working condition. The effective motivators are closely related to the content cf the job. They are based on the feeling of accomplishment and growth with respect to value objectives. The same factors are likely to be most effective motivators of studies.

Wastage in Indian Education

Wastage in our education, particularly at the primary and the secondary school levels is well known. One out of every two candidates at the secondary school examinations in the country, fail to qualify every year. Naik (1964) has drawn attention to the magnitude of the problem of wastage in Class I and has called for a national programme of improvement of this situation. It is also well known, that, besides large number of failures, there is considerable under achievement in those who succeed at examinations. Wan (1962) has drawn attention to the problem of failures, and wastage. He reported that during the last decade, attention has been not only focused on individual failures but on failures of educational practices and system to inspire pupils to excell. Only one out of eight adolescent children in the age group 14 to 17 years reach secondary schools. The high school population is therefore highly selected. Fifty percent failure in this population is really pathatic.

Very few investigations are known to have been conducted on the causes and possible remedies of this situation. For example, only 7 dissertations at the M.Ed.level have been reported, on certain aspects of motivation, between 1939 and 1961 as against 7 Ph.D. thesis, 6 M.Ed. thesis and 96 M.Ed. dissertations on mental testing (1963). The causes of failure of low achievement may be many and varied. The whole system of examination is being qestioned. The curriculum, textbooks and teaching methods also contribute their share to this problem. One of the major factors may be low motivation to achieve (Garett, 1949; Burgess, 1956; Sinha, 1966).

Level of Achievement Motive in High School Boys

How strong are the thoughts of success and failure in our adolescent boys? How strong is their concern to compete with standards of excellence? Answers to those wuestions require systematic studies. The first objective of the research being reported in the following pages, as mentioned above, to make a survey of Achievement motive in our high school boys. It was decided to examine the level in each of the components of n Achievement, nemely; Need (N); Instrumental Activities (I); Goal Anticipation (Ga+ and Ga-); Blocks (Bw and Bp); Help (H); Emotions (G+ and G-); and Achievement Thema (Ach Th). These have been discussed in detail by McClelland *et al* (1953).

n Achievement and School Performance

McClelland has provided evidence (1961) in support of his hypothesis that n Achievement is related to economic growth. He has argued and proposed that societies, high in n Achievement show greater economic growth than those low in n Achievement. Empirical evidence on the relationship of n Achievement and school (academic) performance has been inadequate and erratic (Atkinson, et al, 1962) found social approval motive to be related to performance in exactly the same way as n Achievement. Riccuiti et al, 1955) found moderate positive correlation (r's from .23 to .33) between n Ach and school grades. Unbnger and Stephens (1960) found the two, related in case of students of superior ability McClelland (1953) reported inconvlusive evidence on the relationship between n Achievement and school performance and argued for more systematic studies.

In view of significant wastage in our education and several studies showing low motivation as an important factor in this regard, it was decided to examine the relationship of n Achievement and school performance in some detail. The relevant resouts are reported in Chapter 4 and 6.

Social Class and n Achievement

Several investigation (e.g., Feld, 1960; McClelland, 1955; Rosen, 1956; Veroff et al, 1960) have found higher level of n Achievement in (American) middle class teen age boys than that of working class boys. What is true of American high school boys may or may not be true of Indian high school boys. Information was collected, therefore, on educational level and occupational group and income of fathers of the boys included in the survey. The relevant results regarding n Achievement level, and social class variables are reported, compared with the results of such studies as mentioned above and discussed in Chapter 3.

Demands on Pupils for Success Striving

McClelland has argued (1953, pp 63-64) that achievement motive in an individual or society develops out of growing expectations. The demand put on the individual by his sosicl environment contribute to the development of his desire to success. Drews and Teapan (1963) found parents of high academic achievers to be less permissive in their treatment of their children than the parents of low academic achievers. Ryan (1958); Tannenbaum (1962); Fraser (1959) and Coleman (1960) have reported on inter-relationships of adolescents culture, social acceptance and academic achievement. Sears (1963) found strong inter-personal incluence of opinions of peers and teachers on the learning of less able pupils.

Researches therefore suggest some kind of relationship between the level of achievement motivation and achievement demands on individual in a given family or society. The three sources of such demands on the pupil are: Father, teachers and peers. It was further assumed that such achievement demands are meaningful to the individual to the extent, and the way, he perceives them. It was decided, therefore, to assess the pupil's schema of the expectations of father, teachers and peers for his success in school work and in later life. It was decided to test the following assumptions in this regard:

1) Boys with high n Achievement perceive their peers having high expectations about their (i.e. boys) school performance;

ii) Boys with high n Achievement perceive their teachers having high expectations about their school performance;

iii) Boys with high n Achievement perceive their fathers having high expectations about their school perfomance;

iv) Boys with high n Achievement perceive their fathers having high vocational aspirations for them;

v) Boys with high n Achievement perceive their peers having high vocational aspirations for them;

vi) Boys with high n Achivement perceive their teachers having high vocational aspirations for them;

vii) Boys with high n Achievement perceive their best teachers having achievement qualities;

viii) Boys with high n Achievement perceive their best friends having achievement qualities;

ix) Boys with high n Achievement perceive their fathers having achievement qualities.

Instruments

The major instrument used was a set of TAT type pictures a verbal measure of need Achievement. The investigators of achievement motivation view the behaviour evidenced in stories told to pictures as a joint function of subjects' stable motivational predispositions and his current life situation as well as the situations portrayed in the pictures used as stimuli (Atkinson, 1958; McClelland et al, 1953; Veroff, 1961). In view of these findings, it was decided to develop specific pictorial cues for the purpose of the present investigation. An interview schedule for seeking information on pupil schema was also developed. Although the main survey of n Achievement was based on a thematic appreceptive measure, the development of a self-rating kind of an objective measure known as Achievement Motivation Inventory (AMI), was taken up as a side study. It was believed that such an instrument, if found suitable, would be useful to researchers and teachers alike. Chapter 2 reports research on the development of the instruments.

Group of Schools

The survey was conducted in 32 high secondary schools of Delhi. These schools were selected from 165 secondary schools which were scrutinised for their achieving and the socio-economic status. These schools were first arranged by their total pass percentage at the the Higher Secondary School Examination of 1963. The average pass percentage was 63.90. The schools were divided in two groups, those getting pass percentage higher than 63.90 into one and those getting lower than the average into another. The schools in both the groups s were than arranged in terms of total number of their first divisioners (for the year 1963). The first 28 schools, in each of the two groups, were selected to form the high achieving and the low achieving schools.

These 58 schools came from all zones of Delhi. The respective zonal inspector of schools rated each school on a designed socio-economic status scale. The inspector rated a school as High SES if, in his judgement, it mostly catered to the boys from upper class or the richer sections of the community, and Low SES if a school mostly catered to the boys from the Lower or poorer sectionsof the community. The rest of the schools were rated as middle SES. Thirty two schools were finally selected on the basis of their achieving status (AS) socio-economic status (SES) and geographical location. The schools are shown in Appendix I.

The survey was confined to IX class boys. One section of class IX each was included from 32 schools involving 975 pupils of whom 375 belonged to the science group and the rest came from non-science subjects (humanities and commerce). Chapter 3 reports data on the socio-economic class and the level of their achievement motivation in IX class boys.

The study on pupil schema was conducted on a small sub-sample of 200 Ss. These Ss were individually interviewed. Chapter 4 reports the relevant data and their relationship between school performance and n Achievement score. Chapter 6 contains normative data on AMI, relationship of AMI with n Ach, school performance and pupil schema. Chapter 7 summarises the main findings and raises some questions for further investigations.

The Survey was conducted in February-March 1965. The group tests were administered to the selected Ss in fore-noons in the following order: Thematic apperceptive measure of n Ach; a verbal group test of intelligence (Mehta, 1962); AMI and a socio-economic status scale (Kuppuswamy, 1962). The interviews were given on the next day following group tests. All interviews were carried out by one person.

CHAPTER 2

DEVELOPMENT OF INSTRUMENTS

The first important task, which faced the proposed studies, was the development of suitable instruments for measuring need for Achievement and some variables of pupil's schema, namely, their perception of performance expected of them by their peers, teachers and parents. It was decided to develop the following instruments:

i) A TAT type instrument for measuring need for Achievement (n Ach after McClelland, 1953).

ii) An objective measure of achievement motivation.

iii) An Interview schedule in two parts (a) open ended question and (b) items for which responses were to be sought on a ladder after Cantrill's self-anchoring device (1962).

I

Thematic Apperceptive Measure of n Ach

McClelland et al (1953), Atkinson (1958b) and Veroff (1961) have pointed out the effect of cultural and situational factors on thematic apperception. These researchers have raised the issue that people from different social background may react differently to the same stimulus. This issue has a long history of discussion described especially in Henry's (1947) cross cultural work and Lindzey's (1961) recent summary of cross cultural studies using projective techniques. In view of these research findings, it was decided to develop a set of fresh pictures to work as the thematic apperceptive measure of achievement motive under Indian conditions particularly for high school boys.

Criteria for the Development of Pictorial Cues

The following criteria governed our thinking in selecting and/or developing cues for the instrument:

i) suggest some such situation which may be considered suitable on a priori grounds for evoking achievement imagery (as defined by David C. McClelland and his associates);

ii) depict situation related to achievement experiences of high school pupils;

iii) contain situation familiar to pupils irrespective of their socio-economic background; and

iv) have some person(s) resembling the sex and age group to be studied, i.e., high school boys.

Try Out of Ideas and Cues : Try Out I

Exploratory Study

With the above criteria in mind, an exploratory study was made of situational conditions in the surrounding culture of high school boys with special emphasis on school and home. Magazines, newspapers, journals and other similar sources were searched with a view to select suitable pictures and to get some ideas for developing new pictures. Pictures, used by McClelland and his associates in their research on achievement motivation, were also studied.

Poster Size Pictures

As we were developing criteria and situations for the proposed instrument, it was felt necessary to get a feel of existing classroom situations and to obtain some stories in Hindi for scoring practice. Four pictures were tried out initially. These were B3, B4, B5 and B6 described in Appendix 2. They were drawn on a thick poster paper of 53 x 46 cms., by one of the staff members.[1] It was decided to get such big size pictures so as to display them like posters to a group of about 20 pupils. These pictures were tried out on VIII class pupils of the Senior Basic School of the Central Institute of Education.

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[1] By H.M. Kanade

Administration of the Test

Two members of the staff visited the school for this purpose. They were introduced to the VIII class pupils by the school headmaster, as research students interested in studying the type of imaginative stories pupils could write. The headmaster urged them to follow the instructions carefully and to feel free to write whatever stories they could imagine. After the introduction the headmaste left the room. The experimenters then distributed the answer-sheets containing four papers, one each for four stories. On each paper were printed the following four questions in Hindi:

1. What is happening?
2. What has led up to this situation?
   That is, what has happened in the past?
3. What is being thought?
   What is wanted? By whom?
4. What will happen?
   What will be done?

One of the experimenters then read out the following instructions in Hindi:

> "This is a test of your creative imagination or story telling. A number of pictures will be shown to you. You will have twenty seconds to look at the picture and then about four minutes to write a story about it. Please note that there is one page before you for writing story for each picture to be shown. The same four questions appear on each page to guide your thinking and to enable

you to cover all the elements of a plot within the time allotted. You do not have to answer the questions directly. They are there to help you think up a story. Plan to spend about a minute on each question. I will keep time and let you know when it is about time to go on to the next question for each story. You may go on before I tell you if you wish.

Obviously there are no right or wrong answers, so you may feel free to make up any kind of story you choose. Try to make them interesting, for this is a test of your creative imagination. Do not merely describe the picture you see. Tell a story about it. Write as fast as you can, in order to finish in time. Do not worry about grammer and spelling. Make them interesting. If you need more space for any question, use the reverse side."

Display of Pictures

One of the experimenters stood in the front corner of the classroom facing pupils with a poster in his hands so as to be clearly visible to the entire group. Each poster was held up and shown to the Ss for 20 seconds. After each poster was thus shown for the specific time, Ss wrote their stories on answersheets given to them. Thus, 21 Ss wrote 84 stories, one each on four pictures.

Try Out II

After obtaining experience from Try Out I, six other pictures were developed and tried out. These were G-1, G-2, G-3, G-4, C-1 and C-2 (See Appendix 2).

This was carried out in the same way and on the same sample as Try Out I. The purpose of the second try out was also to get more ideas about further development of cues for the final try out.

Try Out III

Equipped with experience obtained in the first two try-outs, Try Out III was planned more comprehensively. The following steps were taken:

Cues

Twenty four pictures in four sets of six pictures each were developed and used in Try Out III (See Appendix 2) The pictures were semi-structured and were drawn in semi-vague lines. It was hoped that such pictures would evoke Achievement Imagery.

Schools

These cues were tried out on IX class boys in two schools, one from rural Delhi (M.L.Higher Secondary School, Narela) and another from heart of the city (Ramjas Higher Secondary School No.4).

Arrangements of Cues

The cues were administered so as to get approximately equal number of boys from each school as well as for each set. The distribution of Ss who took each set of cues is shown in Table 2.1. Thus, 121 boys wrote 726 stories, six each and a story each in response to six cues.

Table 2.1

PICTURE SET-WISE DISTRIBUTION OF Ss

Picture Set*	No. of Subjects
A	28
B	40
C	25
D	28
Total	121

* Each set contains 6 cues

Administration of the Test

The school conditions disudaded us from projecting slides on a screen. Many of our schools do not have the necessary facilities. It was, therefore, decided to develop cards, one for each picture, and use them like a group test. The same instructions, as were given in Try Outs I and II, were given with minor modifications to suit the purposes of the group test. Each subject, was given six pictures, one after another of the given set. The Ss saw one picture for 20 seconds and then were instructed to put it up side down and write a story in another 4 minutes. After the first story, the second picture was distributed and the Ss saw it in the same way for 20 seconds and wrote a story. Thus six stories were obtained from each pupil, one story for six pictures in a given set.

Scoring of the Obtained Stories

Scoring Practice

The project staff devoted considerable time to practicing and attaining proficiency in scoring. This was done with the help of the Manual developed by Smith and Feld (1958), for what has been named, as the scoring system 'C'. The scorers eventually established an acceptable inter-scorer reliability of .80 or more with the expert scoring given with the practice material (1958). After scoring the practice material, stories obtained in Try Out I and II were scored. These were discussed in staff meetings and some ground rules were formulated for further scoring.

The staff, thus, obtained adequate practice in scoring with the help of stories obtained in Try Outs I and II. They began to understand the subtilities of the scoring system. Before scoring the stories obtained in Try Out III, sufficient time was devoted to further practicing and learning the scoring system. The scorers once again established their reliability of scoring at about .80 with the help of the practice scoring material. They also scored practice material selected from stories obtained in Try Outs I and II. Each scorer first scored every story for AI (Achievement Imagery). They then discussed in staff seminars their scores and the reasons for giving a particular score. In this way they helped each other in getting more practice and in understanding an acceptable objective method of scoring Hindi stories.

Analyses of the Obtained Data

Answers Sought

The pictorial cues were examined for following charactersticsː

a) Discriminating Power. How much power, did a given cue possess to indicate individual differences in achievement motive? All stories written to given cues were first scored for AI. The AI stories were further scored for ten sub-categories. Thus, each individual got some score on stories written to each of the six cues in a given set. The distribution of scores obtained on any one given cue in the concerned set was used to yield 'High' and 'Low' groups. The Ss who were placed in the upper 25% of the distribution of the scores on a given cue formed the high n Ach group and those getting score in the bottom 25% formed the Low n Ach group on that cue. The mean n Achievement scores obtained by these two groups (High and Low groups on the given cue) on the other five cues in the set (excluding the score on the cue under analysis from the total score on the set) were found out. The mean socres on five cues worked as a measure of validation of the remaining, i.e., the sixth, cue in the set. The difference in the mean n Achievement scores (on five cue) of High and Low groups on the given cue (sixth) was a measure of its discrimination power.

b) Evokability of Achievement Imagery (AI). Each picture was examined for its evokability of achievement imagery (AI), i.e. whether a given picture contained adequate achievement related cues and whether it evoked stories which could be scores as AI? Some kind of achievement related cues were put in each picture with the hope that it would stimulate Achievement Imagery in pupils as evidenced in their stories. The stories written to individual cues were scores for Achievement Imagery. The percentage of the total stories coded as AI, with respect to each pictorial cue, formed the measure of evokability of AI of that cue (AI Percentage)

c) Correlation of total scores on each cue with total school marks. One of the objectives of the survey was to find out the relationship of achievement motive in high school boys with their school performance. The school marks obtained by the Ss at their previous annual examination, were collected and converted into standard scores which were used for finding out the correlations reported in the last column of Table 2.2.

d) Inter-scorer Agreement on AI. The agreement between two scorers in coding stories written to a cue, as AI.

e) Rank difference, inter-scorer correlation between total scores (AI and sub-categories assigned by two scorers to the stories written to a cue).

Results : Discussions

Criteria for Acceptance of Cues for Final Instrument

It was difficult to fix criteria for acceptance of cues on several characterstics, simultaneously as mentioned above. Twenty four pictorial cues were tried out of which the investigator wanted to select twelve so as to arrange them in two sets of six cues each. The cues examined on the above characterstics in the following order:

(i) As a measure of individual difference in *n* Achievement was being developed, the discrimination power of a given cue was considered the most important criterion.

(ii) The percentage of AI of stories written to each cue was considered some what equivalent to difficulty value of an item. It was considered desirable for a cue to show AI percentage of near about 50. (iii) The acceptable cues were also expected to show positive correlation with school marks. The ones which showed higher correlation with school marks (than others in the group) were given preference provided they were not apparently unsuitable on the first criterion (i.e.not showing any difference or showing negative difference in mean scores of its (i.e. on the concerned cue) High and Low n Ach groups). (iv) The inter-scorer agreement on coding of AI and inter-scorer correlation between total scorers assigned by two scorers were also kept in view, particularly for the cues which met at least two of the major criteria listed above.

First of all, the cues were arranged in order of their discrimination values (from positive to negative) A5, as seen in Table 2.2, showed the highest mean difference and B3 got the lowest place by showing a negative difference of 3.5. The cues No.A2, A6, and A1 although placed high in order of discrimination value were not considered suitable for the final instrument. A2 ("A boy day-dreaming; see Appendix II) was considered over unstructured. It also showed very low correlation with school marks; A6 ("A group of boys taking examination") showed high negative correlation with school performance (Table 2.4); A1 ("A boy flying kite") was considered playful. This also evoked low Achievement Imagery (Low AI percentage).

The following 15 cues were arranged in order of their discrimination values: A5, A3, A4, A2, A6, C2, A1, C6, D4, B1, B6, D2, B2, C3 and B4. Cues No.A2, A6 and A1 were excluded for reasons mentioned above. The rest of the twelve cues were considered acceptable.

AI Percentage

Table 2.2 shows that, A3, A5, B1, B2, C2, C3, C5 and D2 showed AI percentage of near about 50 ranging between 40 and 56. D5 showed high AI percentage and the rest i.e., A4, B4 and D4 evoked low percentage of AI stories. Of these A4 and D4 showed good discrimination power and B4 showed high positive correlation with school performance. Some other cues, such as D3 and D6 showed High AI percentage but they failed on the first criterion and were, therefore, not atcepted.

Inter-Scorer Correlations

Nine out of 12 accepted cues, mentioned above, showed inter-scorer AI agreement of .80 or more. These cues evoked stories which could be scored as AI with sufficient objectivity. These cues also showed high inter-scorer correlations on their total scores. Some cues, for example, A5, B1, C3 and D2 showed inter-scorer correlations of .70 or above. The above results further confirmed that stories written in responses to most of the acceptable cues could be scored with good objectivity.

Correlations with School Marks

Out of the acceptable cues, some showed high positige, some negative and some just no relationship with school marks. A3, A4, A5, B1, B2, B4 and C2 showed positive correlations, some of which were significant.

Cues Used in the Survey

Table 2.3 summarises the results on the six cues (B4, D4, A5, A3, B2 and C2) which were finally selected for use in the Survey. The last four of these cues showed AI

TABLE 2.2
RESULTS ON CRITERIA OF ACCEPTANCE OF CUES FOR THE THEMATIC APPERCEPTIVE MEASURE OF n ACHIEVEMENT

Cue Code No.	N	Mean n Achievement Groups on each Cue			AI Percentage.	Inter-Scorer Agreement on AI	Inter-Scorer Correlation on total n Ach scores.	Correlations of total n Ach Scores with School Marks
		High	Low	d				
A-1	28	16.1*	11.9*	4.2	28.6	.60	.55	.47
A-2	28	19.3	12.9	6.4	32.1	.87	.72	.06
A-3	28	15.7	07.8	7.9	48.4	.92	.83	.63
A-4	28	18.8	11.5	7.3	21.4	.80	.61	.55
A-5	28	16.1	08.7	8.3	42.8	.92	.86	.31
A-6	28	13.3	08.5	4.8	35.7	.53	.47	-.40
B-1	40	16.8	13.9	2.9	40.0	.85	.82	.34
B-2	40	15.7	13.4	2.3	52.5	.82	.68	.41
B-3	40	14.8	18.3	-3.5	27.5	.66	.71	.56
B-4	40	18.2	16.5	1.7	17.5	.62	.64	.74
B-5	40	15.8	14.9	0.9	42.5	.86	.77	.21
B-6	40	15.7	13.9	1.8	40.0	.91	.36	-.37
C-1	25	15.5	13.7	1.8	16.0	.55	.73	.18
C-2	25	16.4	12.1	4.3	48.0	.92	.75	.27
C-3	25	15.1	12.8	2.3	56.0	.66	.85	.01
C-4	25	14.0	14.2	-0.2	24.0	.63	.77	-.03
C-5	25	15.4	11.9	3.5	48.0	.87	.67	.06
C-6	25	13.1	14.4	-1.3	20.0	.89	.83	-.42
D-1	28	18.2	17.6	0.6	32.1	.67	.87	Data Inadequate
D-2	28	17.7	15.0	2.7	42.8	.80	.83	-do-
D-3	28	17.4	16.8	0.6	62.3	.97	.81	-do-
D-4	28	19.3	16.2	3.4	21.4	.86	.76	-do-
D-5	28	16.5	13.7	2.8	82.1	.68	.38	-do-
D-6	28	15.1	16.5	-1.4	50.0	.75	.72	-do-

* Computed on the total scores obtained on 5 cues, in a set, excluding the cue under study. The High and Low groups correspond to upper and bottom 25% of the distribution of scores on respective cues. Mean scores include a constant of 10, added to avoid negative scores.

percentage of about 50; good discrimination, positive correlations with school marks and high inter-scorer agreement on AI and inter-scorer correlations. The first cue (B4) showed Low AI percentage, Low positive discrimination but high correlation with school marks (highest of the obtained correlation). This is also very much different in content from other cues. The second cue (D4) showed satisfactory discrimination power, high inter-scorer agreement on AI and satisfactory inter-scorer correlation on total scores (An inter-scorer correlation of .70 or more is usually considered as acceptable reliability in such scoring). These cues were administered in the order they are listed. The results on n Achievement reported in later chapters relate to these cues which are exhibited in Appendix The other six cues which were also considered suitable were retained for use in future research.

Reliability of Thematic Apperceptive Measure

McClelland et al (1953) and Atkinson (1958) have shown the effect of momentary state on achievement motivation in the individual. The momentary strength of achievement motivation is assumed to be the resultant of the achievement motive in the individual as a relatively stable personality disposition to strive for achievement and the strength of expectancy of satisfying the motive that is aroused by the cues of test situation and the pictorial cues. Following this theoretical conception the observed changes in the n Ach scores obtained on various occasions could be indicative of changes in the situation and the expectancy of achievement aroused by various cues. These considerations lead to

Table No.2.3
INFORMATION ON CRITERIA FOR THE SIX SELECTED CUES USED IN THE SURVEY

Picture Code No.	Description of the picture Cue	AI Percentage	Inter-Scorer Agreement on AI	Inter-Scorer Correlations on n Ach Scores.	Correlation with School Marks	Total Mean Scores For	
						High n Ach Group	Low n Ach Group
B-4	A doctor and a patient	17.5	.62	.64	.64	18.2	16.5
D-4	A boy learning 'tabla' from his teacher	21.4	.86	.76	NA	19.3	14.2
A-5	A boy with a book sitting on the cot	42.8	.92	.86	.31	16.0	08.7
A-3	A boy with a notebook, an ink-pot and a pen	46.4	.92	.83	.63	15.7	07.8
B-2	A boy painting	52.5	.82	.68	.41	15.7	13.4
C-2	A group of boys playing cricket	48.0	.92	.75	.27	16.4	12.4

NA= Marks not available or inadequate number supposition that the test retest reliability of this measure would be only moderately high. Lowell (1958) administered two equivalent three picture forms to 40 college men at one week interval under comparable test conditions and obtained r = .22 (not significant). Morgan (1955) using two twelve picture forms after five weeks interval under neutral conditions obtained correlations ranging from .56 to .64 for three groups of high school students. French (1955) using the same technique with 30 airforce men found correlation of .45. Habber and Albert (1958) gave two picture forms to college students over a three weeks interval, and obtained correlations ranging from .36 to .59. Feld (1960) obtained the test retest stability of .38 over an interval of six years. Atkinson (1956) reported a split half reliability of .64 (uncorrected).

Reliability of the Present Instrument

Two groups of high school pupils were retested after an interval of four months. In one case the correlation was .39 (N = 41) and in another case it was .56 (N=42). A split half reliability of .58 corrected to .73 (N=22) was found on a group pf research trainees. The obtained results compared well with the results obtained by other researchers in this field.

Components of Achievement Motivation

Analysis of AI Stories for Components

Out of the total number of 726 stories written by 121 Ss, 281 were scored for achievement imagery (AI). These stories were than further scored for sub-categories or components. It is seen in Table 2.4 that Bw (blocks from outside world); Bp (personal blocks); and Nup (help from others) G-(negative affect); I (instrumental activities); and Ga-(goal anticipation of failure) received almost no score. These results have important theoretical as well as practical implications.

Applicability of Scoring System

Low scores on sub-categories raised doubt in the scoring system and its applicability under Indian conditions. A brief study, therefore, was taken up in this regard. Out of the total sample such stories, as were scores as AI independently by two scores, were picked. Two hundred and seventeen stories out of 281 AI stories were thus obtained. Each of these stories was re-examined by a trained scorer. He recorded all such statements in a given story which, he thought, could not be scored under any of the existing sub-categories of the scoring system 'C'. He got 94 stories containing some statements about which he was in doubt. These statements were then further examined by another trained scorer. Finally these were discussed in a staff seminar. It was ultimately found out that all such rescorded statements either were similar to other statements which had already been scored under some sub-category or they were trivial. It was, thus, found out that almost all significant statements or sentences in the obtained stories had been scored. The results suggested, therefore, that the scoring system 'C' was able to pick up all significant imagery content from the stories. The results provided evidence in support of the scoring system and its applicability to the stories obtained from our high school pupils.

TABLE 2.4

PERCENTAGE DISTRIBUTION OF CATEGORIES, UI, TI AND AI FOR ALL SETS OF CUES AND OF SUB-CATEGORIES FOR THE AI STORIES

Set	No. of Stories	UI	TI	AI	Need	I	Ga+**	Ga-	G+	G-	Nup	Bp	Bw	Ach Th
A	168	26.78 (45)a	38.69 (65)	34.52 (58)	28*	64	62	7	2	2	2	0	0	62
B	240	15.00 (36)	48.33 (115)	36.67 (88)	24	73	67	4	16	2	3	0	1	72
C	150	35.33 (53)	29.33 (44)	35.33 (53)	6	64	55	6	11	0	2	2	0	85
D	168	20.24 (34)	30.95 (52)	48.81 (82)	30	80	71	8	26	2	0	0	0	76
Combined Pictorial Cues	726	23.14 (168)	38.15 (277)	38.71 (281)	23	12	65	6	15	2	2	0	0	73

a Figure in parentheses show total number of stories in each case.

* The percentage of sub-categories have been found out with respect to number of AI stories in each case.

** A slight error in scoring Ga+ was detected later. The percentage of stories with Ga+ was reduced in later analyses, as seen in Chapter 3.

II

Interview Instrument for the Study of Pupil Schema

Three important forces, namely, the peers, the teachers and the father, exercise important influence on school pupils. The former hold certain expectations from the latter. The high school pupil, consciously or unconsciously, remains continuously under the impact of peers, teachers and parents. He continually interacts with these force in school, at home and outside. The investigator was concerned not so much with the forces of school and home per se but the pupils's pemception of these forces. It was assumed that achievement demands on a pupil are meaningful to him, the extent and manner he perceives them. Such demands on a pupil may exist, but have little motivational value for him if these don't exist in his psychological field - his schema. The pupil schema of achievement demands or expectations are therefore important in the present context. It was proposed to study the pupil schema of his surrounding world with particular reference to the following:

a) Pupil's perception of peer's expectation from him for success at examinations; for success in some cocurricular competition and for vocational success.

b) Pupil's perception of teacher's expectations of success from him in the areas indicated above.

c) Similarly, pupil's perception of fathers' expectation.
We were after a kind of mirriored information from our Ss. This process involves the following two things:

i) the actual demands or expectations put by peers, teachers and fathers and pupil's; and

ii) the reality of these expectations for the Ss as indicated by their perception of these expectations. The father may be demanding of achievement from the son but if it is not properly perceived by the latter such demands may not really have the same meaning for the two. The expectations or demands would affect the Ss the way they perceive them.

The Instrument

Item

It was decided to collect data on the above pupil schema through unstructured interviews. There are indications that structured interviews with pupils tend to put responses in their mouths. It was, decided to develop a suitable set of open-ended items to make up the interview schedule. Alongwith the open-ended items it was further decided to use items for getting responses on a self-anchoring ladder following Cantril(1962). It was felt that each pupil might have his own anchor to relate his responses. It was hoped that the open ended and ladder type items would provide cross check on responses to these items.

The first draft of the interview schedule contained 40 items of which 16 each were ladder type and open-ended. Of the remaining, three items sought background data. Another three items wanted the subjects to narrate qualities of their peers, teachers and fathers. The first item asked Ss about their own expectations of results at the previous annual examination. One item sought Ss' occupational choice. The items were arranged alternatively. Each open-ended item was followed by a ladder type item. The following instructions were given for the ladder type items:

> Imagine that this is a picture of a ladder of success. The top step on this ladder (showing it) indicate the highest possible success for you and the bottom step (showing it) indicates the lowest possible success for you. In between these two steps there can be varying degrees of success. You have to imagine the expectations of your friends, teachers and the father for your success in future activities and give appropriate answer on the ladder.

Training of Interviewers

After the first draft of the interview schedule was ready efforts were made to train the interviewers. Several role play sessions were arranged. Five actual interviews were given by the interviewers and observed by others for discussion. The interviewers later tape-recorded eight interviews which were used to further train the interviewers.

Try Out 1

The Schedule was tried out on 20 boys reading in class IX in two local schools. This try-out mainly given to provide training to the interviewers; to acquaint them with the school situation and to obtain some data on working and arrangement of the items and the effect of instructions. The project staff met at several stages to review the interviews with the help of the obtained data and made many modifications in the Schedule. The Schedule was then revised as follows:

a) The revised schedule contained fewer items, 36 in all, of which 3 sought background data. It was felt that the items like: "what kind of result your father expected at the previous examinations" mostly brought forth a stereotype response, 'good'. This tended to become a pattern of responses. Such items were therefore modified.

b) The items were re-arranged. Instead of alternate arrangement of open-ended and ladder type items, it was decided to put all items first in a series followed by another series of items to be responded on ladder.

c) Each item was provided with an ancicipated prob item.

Try Out 2

The revised schedule was tried out on 30 IX class pupils, 15 each in two different higher secondary schools. These subjects came from an earlier group on whom the TAT type instrument for the study of n Ach was tried out.

Coding System

Every major variable was studied through some open-ended item. A scheme of coding the responses to open-ended items was developed following the procedure described below.

Arrangement of Responses. The obtained responses to each item were recorded on slips of papers. These slips were then grouped in suitable files. These piles of slips containing responses were further studied in order to arrange them from high to low expectation. In this way 11 categories were obtained, ranging from 10 to 0 corresponding to 11 steps on the ladder. The typical responses were recorded under each category of scores. These categories of responses were discussed in a staff seminar and certain shifting and re-arrangement was done.

Inter-Scorer Reliability. The scorers then coded the obtained responses independently. The inter-scorer arrangement in coding of the obtained responses for each item is shown in Table No.2.5.

Table .2.5

INTER SCORER AGREEMENT IN CODING OF OPEN ENDED INTERVIEW RESPONSES

	Items													
	1	2	3	4	5	6	7	8	9	10	12	13	14	15
Rank Difference Correlations	.84	.56	.84	.76	.90	.96	.78	.89	.88	.88	.81	.93	.90	.94

Table 2.5 shows that 13 out of 14 inter-scorer agreement were more than .75, 11 of which were more than .80. Items 5,6,13,14 and 15 showed agreement of .90 or more. The inter scorer agreement therefore indicated satisfactory coding reliability.

Distribution of scores. Table 2.6 and 2.7 show the distribution of scores assigned to responses to open-ended and ladder type items. The open-ended items 7,8,9,10 and 14, as seen in Table 2.6, showed comparatively 'higher' scores. The first four of the above items related to performance at some co-curricular competition and the last one was on teachers expectation of vocational success. Table 2.7 shows that, the ladder items evoked more 'high' responses than the open-ended. Except on item 1,2 and 7 the frequencies on the lower side of the ladder were almost nil. Items 1 and 2 related to school success achieved previously at annual examination, which as subject to objective verification. The items relating to future performance produced responses closer to the top of the ladder scale. The median response to most of the items, both open ended and ladder, was between 7 and 8 and in some cases between 8 and 9.

Correlations between open-ended and ladder items. The correlation between responses to open ended and ladder type items, presented in Table 2.8 were highly significant (except in one case.) The results suggested therefore, that the two type of items on the instrument tended to reveal same or similar behaviour inspite of the tendency to evoke responses on the 'higher' side of the scales. The two sub-instruments (i.e., open-ended and ladder type items) provided some measure of cross validation for each

Table 2.6
SHOWING DISPERSION OF THE SCORES ON EACH OPEN-ENDED ITEM

Item No.	Responses														
	LOW					AVERAGE					HIGH				N[a]
	0	1	2	3	Total	4	5	6	7	Total	8	9	10	Total	
1.	5	0	0	2	7	1	14	0	1	16	3	1	1	05	28
2	2	0	0	4	6	5	07	1	4	17	1	0	4	05	28
3	0	0	0	0	1	6	12	3	0	21	2	2	2	06	28
4	0	0	0	0	0	4	14	2	2	22	0	3	3	06	28
5	0	0	1	0	1	6	09	5	2	22	0	0	4	04	27
6	0	1	0	1	2	4	07	3	3	17	3	2	3	08	27
7	1	1	0	3	5	0	09	2	2	13	0	5	5	10	28
8	0	0	2	0	2	2	11	0	0	13	1	5	6	12	27
9	1	0	1	1	3	1	11	1	1	14	1	5	5	11	28
10	0	0	1	1	2	2	11	0	0	13	1	5	6	12	27
11	0	0	1	0	1	1	16	1	3	21	0	3	2	05	27
12	0	0	0	0	0	1	16	0	4	21	0	3	2	05	26
13	0	0	0	0	0	1	15	0	1	17	0	6	4	10	27
14	0	2	0	1	3	0	13	0	3	16	2	2	4	08	27

[a] 30 Ss were interviewed for this try out. Some Ss did not respond to certain items or some of their responses were not scorable, thus reducing the N.

TABLE 2.7

DISPERSION OF THE SCORES ON EACH LADDER ITEMS

	Responses														
	LOW					AVERAGE					HIGH				
	0	1	2	3	Total	4	5	6	7	Total	8	9	10	Total	N
1	3	1	0	0	4	0	8	6	6	20	0	4	2	06	30
2	0	2	1	2	5	4	2	4	3	13	6	1	5	12	30
3	0	0	0	0	0	2	7	1	2	12	7	2	9	18	30
4	0	0	0	0	0	3	5	3	3	14	3	6	7	16	30
5	0	0	0	0	0	4	6	3	1	14	3	4	9	16	30
6	0	0	0	2	2	3	4	2	2	11	2	4	11	17	30
7	1	0	0	2	3	1	4	5	3	13	4	5	5	14	30
8	0	0	0	1	1	2	1	3	5	11	6	2	10	18	30
9	0	0	0	1	1	2	4	3	5	14	3	1	11	15	30
10	0	0	0	1	1	4	1	2	2	09	4	5	10	19	29a
11	0	0	0	0	0	1	3	0	8	12	5	4	9	18	30
12	0	0	0	0	0	0	2	3	4	09	8	5	8	21	30
13	0	0	0	0	0	1	3	3	5	12	3	4	10	17	29a
14	0	0	0	0	0	4	2	0	3	09	1	5	15	21	30

a. One pupil did not respond.

other though the degree of 'validation', as seen in Table 2.8, was not the same for all items. These results helped selection of the items for the revised instrument. Table 2.8 shows correlations between the open-ended and ladder type items. All of them except one, were significant.

Discrepancy Scores

Each respondent had given responses without comparable frame of reference with responses of other Ss. Will it be correct then, to group such data together to form categories of expectation? It was felt that the discrepancies in responses between self-expectation and perception of others expectation about oneself might be better indicators of the Ss' level of expectation. The appropriate discrepancies were threfore tabulated with reference to items 3, 7 and 11. (These items related to self expectation respectively of sufcess; at examination, at some co-curricular competition and in some vocation). Table 2.9 and 2.10 record these discrepancy sources for ladder items and the open ended items respectively. It was hoped that such discrepancy scores would provide some reference in comparing perception of other expectation of oneself. Items 3, 7 and 10 worked

Table 2.8

RANK DIFFERENCE CORRELATIONS BETWEEN THE SCORES OF LADDER AND OPEN-ENDED ITEMS

Items	11	2	3	4	5	6	7	8	9	10	11	12	13
Correlations	.61a	.72a	.73a	.54a	.61a	.50a	.51a	.34b	.66a	.72a	.28a	.34b	.6

14
.67a

a Significant at .01 level

b Significant at .05 level

as the reference points. It can be seen in Table 2.9 that 50% of the responses obtained on the ladder indicated no discrepancy; 200 out of the obtained 265 responses, i.e., about 76% of discrepancy scores ranged between ± 1 and 90% ranged between ± 2. The results indicated that the respondents perceived other people to have expectation from them as similar to their own expectation from themselves. May be that the latter responses were influenced by the responses on items 3, 7 and 10. The responses to the open-ended items showed more discrepancies. But the results recorded in Table 2.10 indicate more or less the same pattern as Table 2.9. It was, therefore concluded that the distribution of actual scores as recorded in Tables 2.6 and 2.7 and the discrepancy scores recorded in Tables 2.9 and 2.10 tended to tell more or less the same story.

Table 2.9
FREQUENCY DISTRIBUTION OF THE DISCREPANCY SCORES ON LADDER ITEMS

Items/Scores	Expectation									
	Curricular			Co-Curricular			Vocational			Total
	4	5	6	8	9	10	12	13	14	
+6	0	0	0	0	0	1	0	0	0	1
+5	0	0	1	2	1	1	0	0	0	5
+4	0	0	0	1	1	1	1	1	0	5
+3	1	1	1	0	1	2	0	0	1	7
+2	1	2	1	5	4	4	0	2	6	25
+1	5	5	4	5	7	4	8	4	2	44
0	12	11	18	12	10	11	16	16	17	123
-1	7	7	1	4	5	3	2	2	2	33
-2	2	3	1	0	0	2	3	3	1	15
-3	1	0	1	0	1	0	0	0	0	3
-4	0	0	1	0	0	0	0	0	1	2
-5	0	1	1	0	0	0	0	0	0	2

Table 2.10

FREQUENCY DISTRIBUTION OF THE DISCREPANCY SCORES OPEN-ENDED ITEM

Items/ Scores	ITEMS 4	5	6	8	9	10	12	13	14	Total
+8	0	0	0	1	1	1	0	0	0	3
+7	0	0	0	0	0	1	0	0	0	1
+6	0	0	0	0	0	0	0	0	0	0
+5	0	2	1	1	2	1	0	1	1	9
+4	1	0	1	1	1	2	0	3	1	10
+3	1	0	4	0	0	1	1	2	2	11
+2	2	0	1	3	2	1	2	1	2	14
+1	6	6	5	2	2	2	1	1	2	27
0	14	10	6	14	13	11	19	14	14	116
-1	3	5	3	2	2	3	2	2	0	22
-2	0	2	3	1	1	1	0	1	2	14
-3	0	1	3	0	0	0	1	1	0	6
-4	1	1	0	1	2	1	0	0	2	8
-5	0	0	0	0	1	1	0	0	0	2
-6	0	0	0	0	0	0	0	0	0	0
Total	28	27	27	27	28	27	26	26	26	242

The Revised Schedule

Modification of Items

Item 1 and 2 which were found to influence later responses were dropped. Items 16 and 17 which sought background data were also dropped as this information was obtainable separately. The rest of the items were retained. Some items needed minor modifications in their wording. It was done so as to further increase their pointedness.

Re-arrangement of the Items

The obtained results indicated the influence of earlier responses on the following responses. It was partly due to the arrangement of items. For example, items pertaining to success at examination were one after another for peers, teachers and parents. The respondents tended to give similar replies to all the three. It was difficult to completely eliminate the effect of one response on another. It was, however, felt that a random arrangement would help reduce this. It was, therefore, decided to mix the items. The new item arrangement is seen in Table 2.11. This was done without any definite order. The items pertaining to self expectations were shifted towards the end. It seemed that there was no gain in keeping items in two separate series, one for the open-ended and another for the ladder. This unnecessarily increased the interview time.

Table No.2.11

ITEM ARRANGEMENT IN THE REVISED INTERVIEW SCHEDULE

Perception of Expectation	Success in Examination	Success in Vocation	Success in Cocurricular Competition	Occupational Choice	Family Religion
Peers	8*	3	1	0	0
Teachers	6	9	4	0	0
Fathers	10	5	7	0	0
Self	13	12	11	2	14

*These are item numbers on the revised schedule. Each item has two parts, one open-ended and another on the ladder. See Appendix 4.

The interviewers also felt that this arrangement was less interesting. It was, therefore, decided to revert to the alternate arrangement of open-ended and ladder items. The revised schedule contained 14 items; one each for nine pupil schema variables, mentioned in Chapter 1; three of self expectation, one on pupil's vocational choice and one seeking background data (Family religion). The coding criteria for the open-ended items can be seen in Appendix 4a.

The Achievement Motivation Inventory

The Achivement Motivation Inventory (AMI) - a multiple response type questionnaire was developed with the help of the stories written up by high school boys to TAT type pictures. The following two considerations prompted the decision to use the TAT stories as the source material for development of the AMI, (i) It was hoped that the AMI, based on the pictorial cues and stories written to them, would reveal achievement motivation similar to or at least a close approximation to the thematic apperceptive measure of *n* Achievement. The use of the latter requires more training, practice and time. The AMI, as a close approximation to the measure of n Achievement might be an easy to use tool for the teachers and researchers alike; (ii) The use of the rich material in the form of stories was expeditious.

Procedure

Search for Alternatives

The stories written to TAT type pictures were re-searched. Those which were scored independently by two scorers either as AI or TI or UI, were selected. Such stories were checked in order to obtain alternatives for each item on the Inventory. Care was taken to ensure that the selected alternatives were comparable on social desirability dimension. The statements included in the inventory were based on 24 pictures used earlier in developing the thematic apperceptive measure of n Achievement. The twenty four AMI items were in fact, behavioral discriptive statements of pictures. Each statement was followed by six responses of which two each were achievement related (AR), task related (TR) and unrelated to achievement (UR).

Criteria

The TAT type pictures, 32 in all, were developed following four criteria. The pictorial cues were expected to be suitable for evoking achievement imagery in our high school boys related to their achievement experiences and based on situations familiar to such pupils irrespective of their socio-economic background. It was, therefore, hoped that the behavioural statements would also meet these criteria. The statements included in the Inventory can be seen in Appendix 5.

Alternative Forms

Three forms were developed. All the forms contained the same 24 statements. In form A and B, each item was followed by three alternative responses one each of which were AR, TR and UR. The responses to items in Forms A and B were combined to make six alternatives in Form AB. Forms A and B were expected to be equivalent. It was decided, (i) to study the reliability of the

Inventory through the equivalent forms; (ii) to find out the relative efficiency of the different forms; and (iii) to develop if possible, two parallel forms of the Inventory.

Try Out

The Inventory was tried out on the same Ss who had earlier taken the TAT type test. They were IX class boys reading in two local higher secondary school one rural and another urban. The use of the same Ss aimed at obtaining data which could be compared to the stories written by them earlier in responses to pictures. The Inventory was administered without time limit. The Ss were, however, told that the boys of their age usually take about 15 minutes to complete. The following instructions were given to them;

> "This booklet contains some statements relating to behaviour of boys like you. Each statement depicts a situation involving one or more persons doing something or other. Each statement is followed by six alternative responses showing the possible reasons or purposes of the behaviour contained in the statement. You should first study each statement carefully and then, put a cross (x) in the square preceding that one response which you think is the best reason or purpose of the work described in the statement. Remember that you have to put a cross only in one square".

Scoring

The Ss were told to check only one alternative. The obtained response to an item therefore, could be either achievement related (AR), task related (TR) or unrelated to achievement (UR). Each subject was assigned four scores. The number of AR, TR and UR

responses checked, formed AR, TR and UR scores. Each AR response was scored as +1 and UR as -1. The latter was subtracted from the AR scores to obtain the total AMI score. In this scoring, the Ss were punished for each UR response as in the scoring of TAT stories for n Ach.
For want of better conceptualisation, it was decided to
∠ (i.e. number of achievement related responses given;
describe scores on the AMI as (AR) score, ∠AMI UR score and
the total AMI score. The last score was used for the preliminary items analyses reported in this chapter.

Discrimination and Difficulty Values

The discrimination values were worked out through bi-serial correlations between the top and bottom 27% of the total AMI scores. The difficulty values were the percentage of AR given to each item. This was really the evokability of each item for achievement related responses (i.e., AI responses). Form AB, showed better discrimination and difficulty values as compared to Forms A and B, as seen in Table 2.12. The median difficulty value of Form AB was 42.83%.

Selection of Items for Form AB

The items which showed difficulty and discrimination values between 25 and 75 were considered suitable. Eighteen items in Form AB adequately met these criteria. Another two items showed good difficulty values and nearly acceptable discrimination. These were therefore accepted. The remaining two items, which showed poor difficulty and discrimination values were rejected. The distribution of difficulty values for

TABLE 2.12

DISCRIMINATION AND DIFFICULTY VALUES OF INVENTORY ITEMS

Items	FORM A		FORM B		FORM B	
	Difficulty Values i.e. AR%	Discrimination	Difficulty Values i.e. AR%	Discrimination	Difficulty Values i.e. AR%	Discrimination
1	50	.33	57	.56	49	.31
2	62	.38	40	.53	60	.61
3	26	.33	41	.30	34	.54
4	32	.19	67	.31	42	.21
5	39	.27	35	.22	35	.27
6	28	.40	29	.36	35	.56
7	62	.83	57	.37	47	.59
8	71	.30	56	.37	68	.49
9	16	.11	22	.49	27	.60
10	33	.21	27	.38	37	.41
11	31	.33	28	.63	28	.49
12	53	.11	66	.32	63	.18
13	83	.40	55	.54	70	.40
14	75	.33	52	.25	63	.43
15	27	.03	22	.32	27	.22
16	66	.47	56	.57	59	.40
17	58	.32	21	.08	39	.17
18	34	.49	59	.49	40	.46
19	59	.42	64	.31	61	.51
20	48	.82	35	.48	38	.64
21	33	.65	47	.33	40	.43
22	31	.48	46	.25	35	.52
23	56	.41	62	.48	56	.49
24	44	.44	74	.13	73	.53

the accepted items in Form AB is seen in Table 2.13. These, 22 items with better discrimination power composed the AMI which was used in the survey of Achievement Motive in High School Boys.

TABLE 2.13

FREQUENCY DISTRIBUTION OF DIFFICULTY VALUES OF ACCEPTED ITEMS : FORM AB.

	Difficulty Values									
	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74
f	3	1	6	3	2	0	2	4	1	2

Mdn. = 42.83

Reliability

The K-R 20 reliability was as follows: .67 for Form AB; .55 for Form A and .59 for Form B. Form AB showed a split-half reliability of .55. The K-R 20 formula tended to show lower bound value under the conditions of the Inventory where there were several alternatives. The obtained reliability of the .67 for Form AB was therefore considered satisfactory.

Relation with n Achievement

As stated above, the Inventory was tried out on the same Ss who had earlier written stories in responses to TAT type pictures. The n Ach scores obtained on the above picture were therefore correlated with the score obtained on the Inventory (Form AB). The correlations were found out between the total AMI scores and the total n Ach score on the given set of TAT pictures. The correlations are shown in Table 2.14.

The obtained correlations were rather low. However, correlations with Set C and D were high. The negative correlation with Set D was interesting. These results will have to be checked by larger studies in future.

Some of these and similar results are discussed in Chapter 6.

TABLE 2.14

CORRELATIONS BETWEEN THE AMI AND n ACHIEVEMENT

TAT Sets	A	B	C	D
Rank Differences Correlations	.17	.09	.56	-.41
N	9	8	12	6

Parallel Forms of the Instrument

The product moment correlation between Form A and B was .50. Both these forms showed atleast 20 items which met the acceptable criteria of selection. These forms will be studied in more detail in future.

Form AB in the Survey

Form AB showed satisfactory results. Twenty two out of 24 items met the accepted criteria of difficulty and discrimination. It also showed satisfactory reliability. This form was therefore taken up for further use in the survey of Achievement Motive in High School Boys. The main objective of the use of the AMI was to study its relationship with n Achievement. Some interesting results particularly on the AR (AMI), TR (AMI) and UR (AMI) are reported in Chapter 6. Their implications are discussed there. The AMI instrument is exhibited in Appendix 6.

CHAPTER 3

ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS

School and Pupils

There were 213 boys higher secondary schools under the Delhi State Education Department in 1964-65, the time of drawing the sample for the present investigation. Out of these, boys from 165 schools appeared at the Higher Secondary School Examination in the year 1963. About 1,000 IX class boys were needed for the purpose of the present survey. Calculating at the rate of 35 pupils (one section class IX) it was decided to draw 32 schools basically on the following two criteria: (a) school achieving status (b) school socio-economic status.

Achieving Status. First of all, the above 165 schools were arranged in order of their total pass percentage at the 1963 Higher Secondary School Examination. The mean pass percentage was 63.9. Thirty five schools clustered around the score group of 56 to 65, 63 schools were above the average and 67 below it. These schools (those above and below the cluster on the average) were separately listed in order of their results. The percentage of pupils passed on the First Division were recorded against each school. There were first divisioners only in 28 schools - all above average. These schools were re-arranged in order of their percentage of first divisioners. These 28 schools were designated as High Achieving (High AS). From the list of below average schools, the last 28 schools (counting from bottom) were taken out. These were designated as low Achieving (Low AS).

School SES. The schools in Delhi State are divided in four geographical zones. The above 56 schools were scattered in all the four zones. Each zonal inspector of schools was personally approached with a list of school (out of 56 schools) in his zone and a socio-economic status scale shown in Appendix VIII. He was requested to rate each school on five point scale. If, in his judgment, a school catered mostly to the boys from the upper most - the richer most - sections of the community, he rated that school as 'A'; if the school catered mostly to the middle class boys, he rated the school as 'C'; 'B' if a school catered to the boys from sections between 'A' and 'C'; 'E' if the school catered to the boys from the Lowest sections and 'D' if the school boys came from sections between 'C' and 'E'. The groups 'A' and 'B', mentioned above, were combined to form High SES schools; the groups 'C' and 'D' formed Middle SES and the group 'E' formed Low SES school. Out of the High achieving schools, fifteen were rated as High SES, eleven as Middle SES and none as Low SES. Two of these schools could not be rated. Out of the low achieving schools, fourteen were rated as Middle SES, and the rest as Low SES. No low achieving school was rated as High SES. Keeping in view, the total number of boys needed for the survey it was decided to include fifteen High AS schools and seventeen Low AS schools in the sample, Six High SES schools from the High AS group were selected, one each from six different localities of Delhi city. Nine schools of Middle SES (nine) each from High and Low AS groups were selected. These schools were matched on their location. The remaining eight schools were drawn from Low SES and

Low AS groups. Four of these are rural schools (outside the city) one from each school zone of Delhi state. Factors such as the number of IX class boy,s, their subject group (Science, Commerce, etc.) school location, the apparent nature of locality (e.g. predominately a Government colony) besides the basic criteria of AS and SES were also kept in view in the final selection of schools. The above 32 schools provided 975 IX class boys for the present Survey.

The Urban Ss checked a socio-economic status scale (Kuppuswamy, 1962). The scale seeks information on fathers' occupation, education and income and give a composite SES score. About 5% boys were placed in High SES, 53% in Middle, 30% in Low SES and no data were available for about 12%. The Ss ranged in age between 11 and 20 years with mean age at 14.21 and median age at 14 years. The distribution of age is shown in Figure 3.1.Figure 3.2 shows a near normal distribution of intelligence scores obtained on a verbal group test of intelligence (Mehta, 1962) with a mean score of 40.13 (maximum obtainable score 60) a median score at 40.00 and a SD of 7.42. Out of 975 Ss, 370 were studying the science group. The rest were studying either commerce or some subjects from the humanities group. These were combined to form the non-science group.

Test of n Achievement

The thematic apperceptive measures of n Achievement consisted of six pictures (B4, D4, A5, A3, C2 and B2, see Appendix II). The picture were administered as a group test. The Ss saw a picture for about 20 seconds, turned it upside down and then wrote a story (in a booklet consisting of 6 sheets, on each of which were printed the

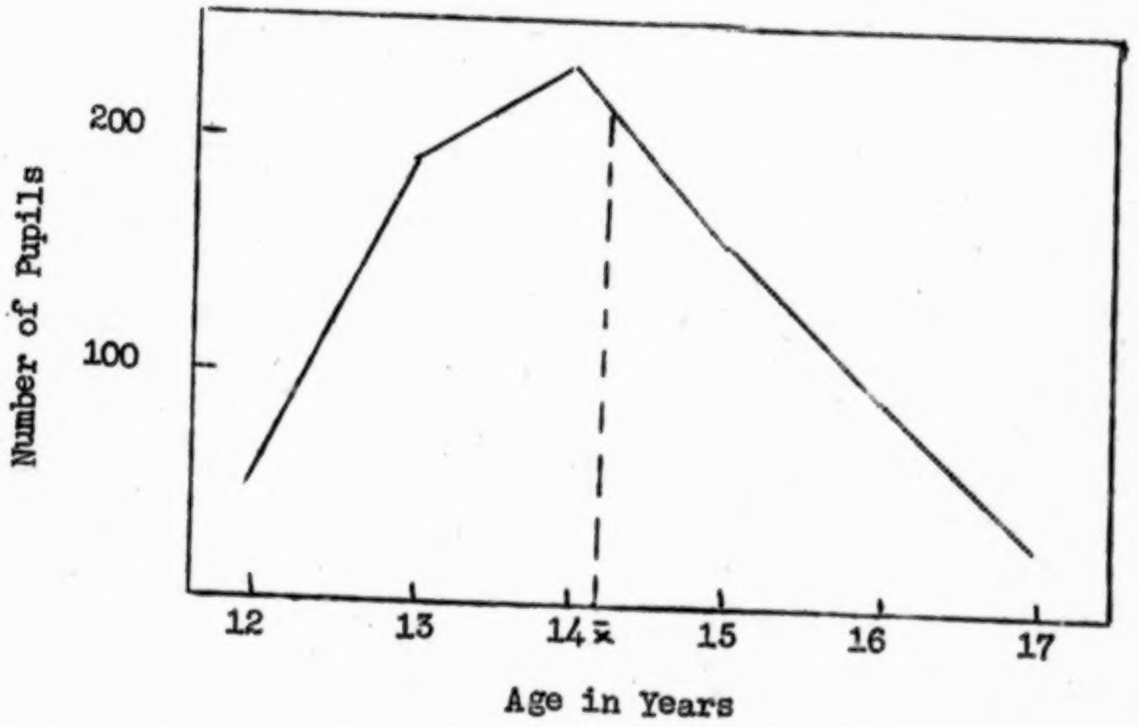

Fig. 3.1 DISTRIBUTION OF PUPILS BY AGE

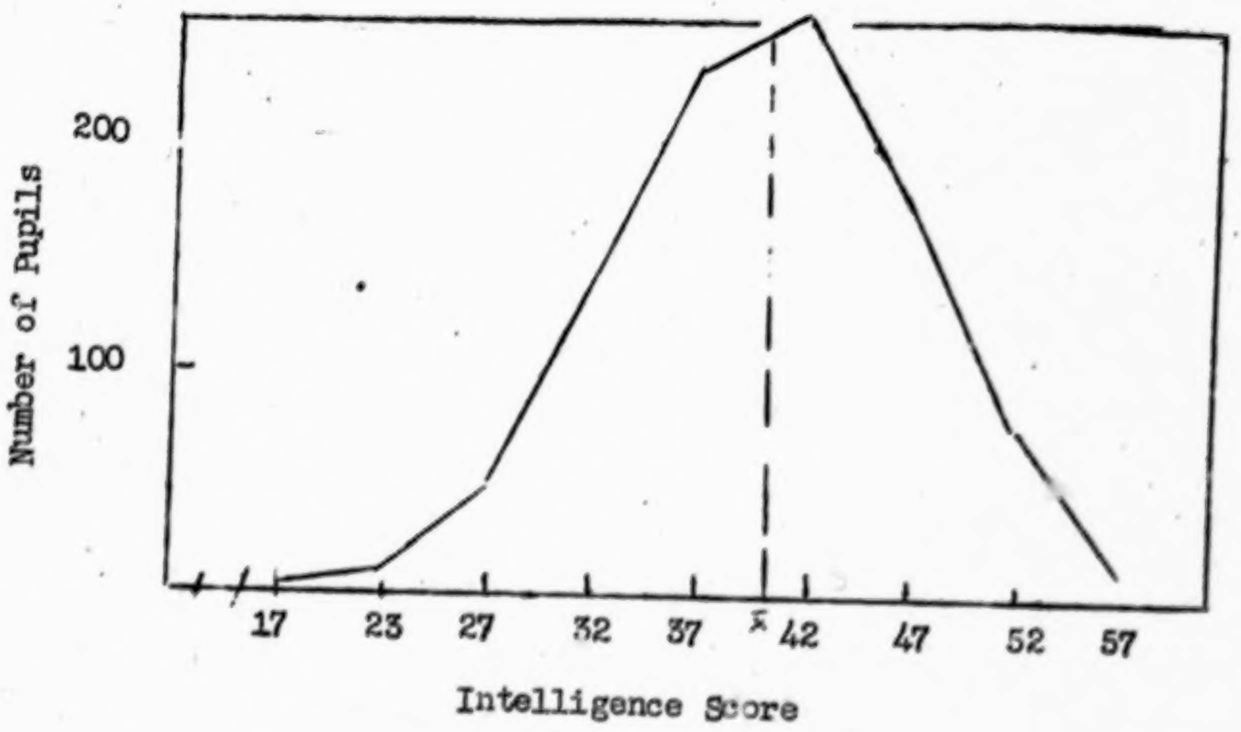

Fig. 3.2 DISTRIBUTION OF INTELLIGENCE SCORE

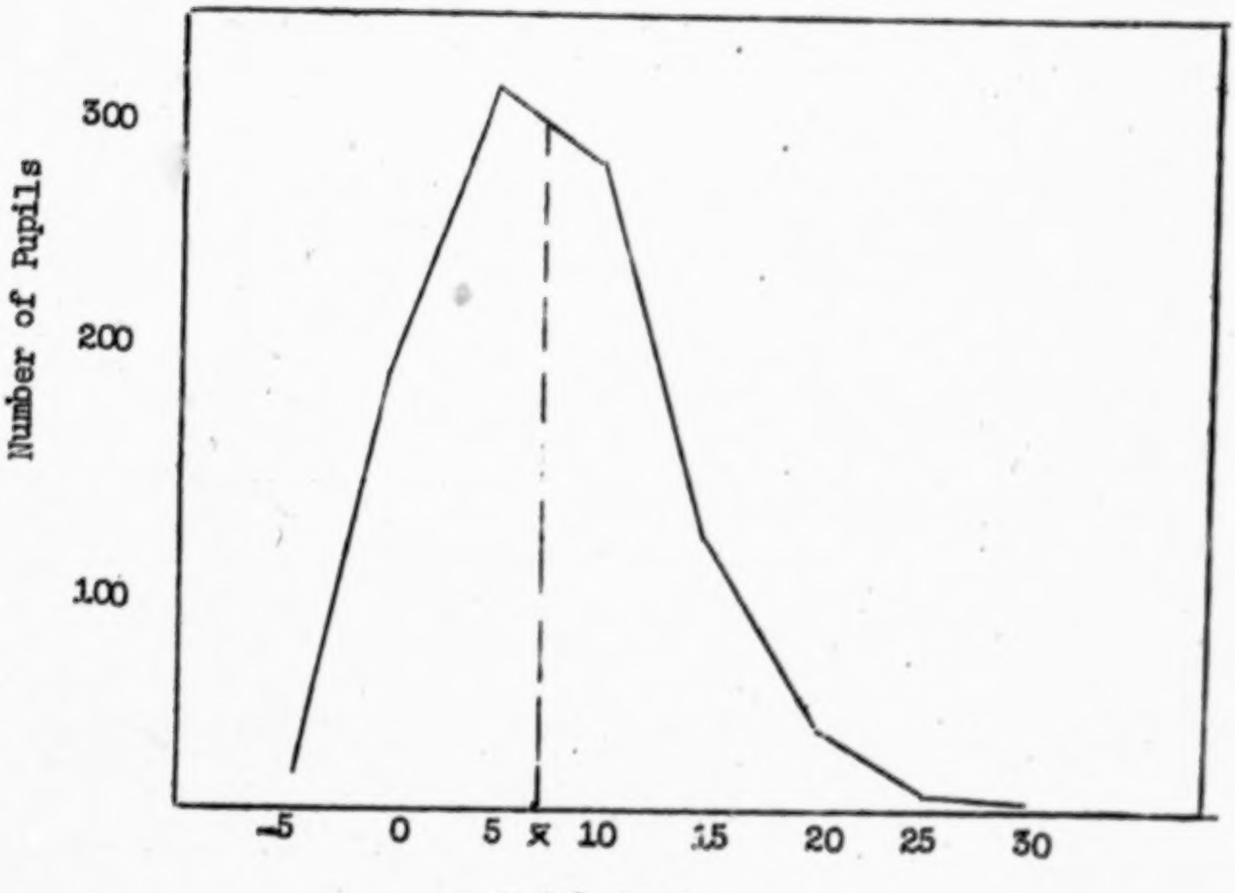

Fig. 3.3 DISTRIBUTION OF n Ach SCORES

usual four questions) in about four minutes.

Scoring

Nearly 6,000 stories were obtained from about 1,000 pupils. These stories were scored by a team of three scorers. These scorers had earlier obtained considerable scoring practice during the try-out stages of the development of the TAT type instrument. They once again practiced their scoring skill. The scorers followed the standard procedure laid down in Smith and Feld Manual (1958). Each subject wrote six stories, one each to six cues. These stories were divided into three groups of two stories each i.e., written to the first two cues, next two cues and the last two cues. Each scorer scored one group of stories, i.e., he scored stories written by all Ss to the same two cues. This ensured high scoring reliability as seen in Table 3.1.

TABLE 3.1
n Ach SCORING RELIABILITY

Scores	Intra Scorer Reliability	Intra Scorer (with an interval of 10 days) Reliability*	N
1 and 2	.865	.940	32
2 and 3	.902	.860	32
3 and 1	.890	.920	32

* Related to the first scorer in the pair.

Level of Need Achievement

Distribution of n Achievement Scores

The scoring system allows a maximum score of 11 and a minimum of -1 on each story. The maximum score obtainable on 6 stories was therefore 66 and the minimum -6. The obtained scores ranged between -6 and 29. The scores showed a near normal distribution, as seen in Figure 3.3, with some positive skewness. The mean n Ach socre was 7.14, the median 7.00 and the SD 5.96.

TABLE 3.2

FREQUENCY DISTRIBUTION OF n ACH SCORES

N = 975

n Ach	X	f	%f	Com.% f
-7 - -3	-5	21	2.15	2.15
-2 - +2	0	191	19.60	21.74
3 - 7	5	319	32.71	54.46
8 - 12	10	279	28.61	83.08
13 - 17	15	121	12.42	95.49
18 - 22	20	39	4.00	99.49
23 - 27	25	3	0.30	99.79
28 - 32	30	2	0.20	100.00

Scores on Sub-Categories

As stated above, the total n Ach scores for each S was composed of the points he got for each of the sub-categories. The scoring system permits 10 points, one each for Need (N); Instrumental Activity (I); Postive Goal Anticipation (Ga+); Negative Goal Anticipation (Ga-); Block from outside world (Bw); Block from Within (Bp); Help (H or Nup); and Achievement Thema (Ach Th). Every story ....

is first coded from Achievement Imagery (AI) and given one point in case it meets atleast one of the following criteria; (Competition with some standard of excellance; (ii) Unique accomplishment; and (iii) Long term involvement. Only such stories which contain AI are further scored for the above 10 sub-categories. The sub-categories really form the components of Achievement motive. Such Ss who could verbalise more of these sub-categories, in their stories, got more scores thereby showing hither n Ach than those who verbalised less.

Table 3.3 shows percentage of stories which were coded as AI, as well as those which were further coded for one or more sub-categories. It also shows that nearly 40% of the total stories were coded as Achievement Imagery. These 2304 stories were scored further for sub-categories. Seventy three percent of these showed Need; 76% of showed Instrumental Activity and 64% were scored for Achievement Thema. A small number of stories showed Ga+ (about 7%), Ga- (about 3%) and G+ (about 8%). The remaining sub-categories nemely Bp (1.74%), Bw (1.13%), Nup (0.39%);and G-(0.65%) could be scored only very seldom. It seems, therefore, that only three sub-categories - N, I and Ach Th - really contributed to the total n Ach score. The lack of expression of some of the sub-categories could only lower the level of the Achievement motive of the respondents. Why certain components were less verbalised than others? What can we say about the level of achievement motivation in high school boys? How does it compare with levels of n Achievement elsewhere? As compared to the maximum obtainable score of 66 the obtained scores were apparently low, with a mean showing sub-categories like ; Ga+, Bp, Bw, Nup, G+ and G- were low as seen in Table 3.3.

TABLE 3.3
PERCENTAGE DISTRIBUTION OF n ACH CHARACTERSTICS

Characterstics	Indian Boys^c N=975	1950 Readers^b Rapidly Growing Economy (N=18)	Slowly Growing Economy (N=21)
Number of stories unrelated to Achievement (UI)	838 (14.31%)		
Number of task related storeis (TI)	2714 (46.35%)	173	173
Number of Achievement related stories (AI)	2304 (39.34%)		
Need stated (N)	73.18%	14%	13%
Instrumental Activity (I)	76.30	84	60
Anticipation of scores, doubtful or Anticipation of failure (Ga+ and Ga-)	9.72	37	32
Obstacle in the self, Obstacle in the world (B_p and Bw)	2.87	21	35
Help by another person (H)	0.39	11	15
Positive emotion, Negative emotion (G+ and G-)	9.07	44	33
Themas (Ach Th)	64.28	56	51

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a. Percentage of number of Achievement related stories.
b. Data cited from McClelland (1961, p.104). Results based on analysis of Readers.
c. Verbal measure of n Ach.

On the other hand a large number of such stories as were coded as AI showed need (73.18%); instrumental activity (76.30%)

and thema (64.28%). McClelland (1961) has provided data from his analysis of readers (Children's stories) for two groups of countries, one with rapidly growing economy and another with slowly growing economy on n Ach characterstics. These results have been recorded in Table 3.3 for a comparative study. The percentages of stories containing N, I, and Ach Thema in the present Survey compare very well with those from McClelland's analysis of readers, although the two studies used different measure of n Achievement. For other characteristics the present survey results were considerably lower as compared both with results obtained from rapidly growing economy as well as from slowly growing economy. For instance 44% of the readers from rapidly growing economy and 33% from slowly growing economy showed emotions either positive or negative whereas only 9.07% of the stories in the present survey showed these characteristics. Fifteen percent of the readers from slowly growing economy showed Help from another person whereas only 0.39% of the present stories showed this characteristics. Same is the case with obstacles in the self and/or obstacles in the world, which was found in 35% of the analysed readers from slowly growing economy and 21% from rapidly growing economy against 8.27% in the present survey. Thus out of 10 n Achievement characteristics for which the stories and readers were coded for the stories in the present survey compared well or showed more on three characteristics. On the other seven characteristics, the present stories showed considerably lower results when compared with those either from the slowly growing economy or from the rapidly growing economy.

Does the above comparative analysis show that the level of n Achievement in Delhi high school boys was low? The data provided in Table 3.4 gives some answer to this question.

TABLE 3.4

MEANS AND STANDARDS DEVIATIONS OF n. ACHIEVEMENT SCORES IN FOUR COUNTRIES

	A	B	C	D	E	F
n Ach Scores	Japan^{a} N=175	Germany^{a} 411	Brazil^{a} 378	India^{a} 152	India^{b} 974	USA^{c} 424
Mean	8.24	4.60	5.47	3.79	4.76	4.76
S.D.	4.81	5.34	4.24	4.79	3.82	5.11
Mean Age (in Years)	15.40	16.00	16.80	16.50	14.21	
S.D.	1.00	0.90	1.50	0.80	1.34	

	t	P
A and E	3.37	.01
B and E	0.63	NS
C and E	2.62	.01
D and E	0.94	.20

a. Stories written to four pictures by school and college Ist year boys. Results taken from McClelland (1961, p.480).

b. Stories written to six pictures in the present survey. The original mean n Ach is 7.14 and SD is 5.73 which have been adjusted here to 4 pictures.

c. Data recorded here from Rosen (1959) found with tenage boys.

McClelland (1961) has provided data for n Achievement levels in high school and college Ist year boys from four countries including India. His results are based on stories written to four pictures stories. The results obtained in the present survey have been adjusted in Table 3.4 to four pictures to render them comparable. The mean n Ach score obtained in the present survey on Delhi School boys was slightly higher although statistically not significant, than that obtained on Madras boys in McClelland's study (t = 0.94; $P \angle .20$). It was also little higher although not significantly than that of Germany boys. It was lower than the n Achievement levels shown by boys in Brazil (t=2.62; $P \angle .01$) and considerably lower than that shown by the Japanese boys (t = 3.37; $P \angle .01$).

McClelland study was conducted on selected schools and colleges in Madras, may be, somewhere in 1960 or before. The mean age of Delhi boys was 14.21 while that of Madras boys was 16.50. The former came from class IX and the latter from class X or XI and some from 1st year college classes. In view of the difference in Ss' age and level of schooling, the difference in n Achievement levels assumed added significance.

How do you account for the difference in the levels of Achievement motivation of Madras and Delhi boys? The n Achievement scores derived from stories written to pictorial cues are available for influence by immediate situational cues. The pictures were administered under neutral conditions in both the studies. The difference in situational and/or instructional cues seem ruled out. The two studies used different set of pictures portraying different stimuli. This factor could have produced difference in the behaviour evidenced in the obtained stories. Yet another reason may be that the two samples really differed in their motivational disposition. That the Delhi boys really possessed higher n Achievement than the Madras boys. The Madras

University and colleges are popularly known for their supply of personnel for the Indian Administrative Service and other Government and professional jobs. A large number of parents of the boys studying in Delhi schools have come from the Punjab. Quite a few of them have come from West Pakistan after the partition of the country. These persons are popularly known for their enterprising nature. Are these parents responsible for developing a higher level of n Achievement in their boys? The answer shall have to wait till further data are available.

The n Ach level in Delhi high school boys seemed well comparable with that of German and U.S. boys. It was lower than of the Brazilian and the Japanese boys. It would be interesting to know about the sources of differences in levels of achievement motivation in Indian and other boys. What factors cause these differences? Some data to this effect are presented later in this chapter.

n Achievement, School Characteristics and School Class

How are school characteristics related to n Achievement? Does the type of school, a pupil attends, influence his n Achievement score? There were high as well as Low AS schools with different social status in our sample. Table 3.5 reports some basic data on n Ach scores by schools. There were six High SES schools and nine Middle SES among the high achieving group. Among the low achieving schools, nine belonged to Middle SES and eight were Low SES of which four came from rural areas near Delhi. The mean n Ach scores ranged between 6.45 and 9.67 for schools High both in AS and SES; between 3.61 to 8.75 for schools with Middle SES and High AS; between 2.68 to 10.00 for schools with Middle

SES and Low AS; and between 4.13 and 10.31 for Low SES and Low AS schools. The highest mean n Ach score was obtained by a Low SES school with Low AS and located in the countryside.

Table 3.5
MEAN n ACHIEVEMENT SCORES FOR SCHOOLS BY THEIR ACHIEVING AND SOCIO-ECONOMIC STATUS

School SES	School Code	N	Mean n Ach	Median n Ach	SD
HIGH**	07	39	8.46	8.41	5.68
	12	33	8.94	9.42	6.00
	09	30	9.67	10.28	5.47
	08	31	7.58	6.25	5.94
	10	38	6.45	6.50	4.57
	04	47	7.34	7.79	4.93
MIDDLE**	13	40	8.75	8.75	5.89
	15	33	7.27	8.09	3.91
	16	44	6.59	5.94	5.41
	19	50	7.40	7.78	6.50
	06	30	4.33	3.61	4.42
	27	34	9.12	8.12	6.36
	11	28	5.71	6.39	5.48
	03	38	7.24	6.03	5.70
	01	36	7.08	7.11	5.05
MIDDLE	20	35	6.43	6.50	5.29
	18	30	8.50	8.93	4.31
	02	20	9.75	8.93	7.33
	17	34	4.56	3.75	5.73
	14	34	2.65	2.19	3.88
	05	34	7.06	6.14	6.66
	21	27	4.81	5.36	5.60
	26	23	8.26	8.33	6.85
	28	05	10.00	12.50	7.07
LOW	25	16	6.56	6.07	4.67
	22	17	9.70	10.00	5.28
	24	25	6.60	6.14	4.84
	23	27	6.30	6.59	3.99
RURAL	32*	15	6.33	6.07	4.64
	31*	16	10.31	10.00	5.44
	29*	23	4.13	4.17	5.24
	30*	42	8.21	8.21	5.54

* Rural Schools

**High Achieving Status Schools

There were four rural schools located at the out-skirts of Delhi. The rest of the schools are all urban. The location of schools appeared to produce no significant difference in the n Achievement levels of the Ss as seen in Table 3.6. These showed about the same as the general level, i.e., a mean n Achievement score of 7.14. Figure 3.4 shows identical distribution of n Achievement for urban and rural Ss.

TABLE 3.6

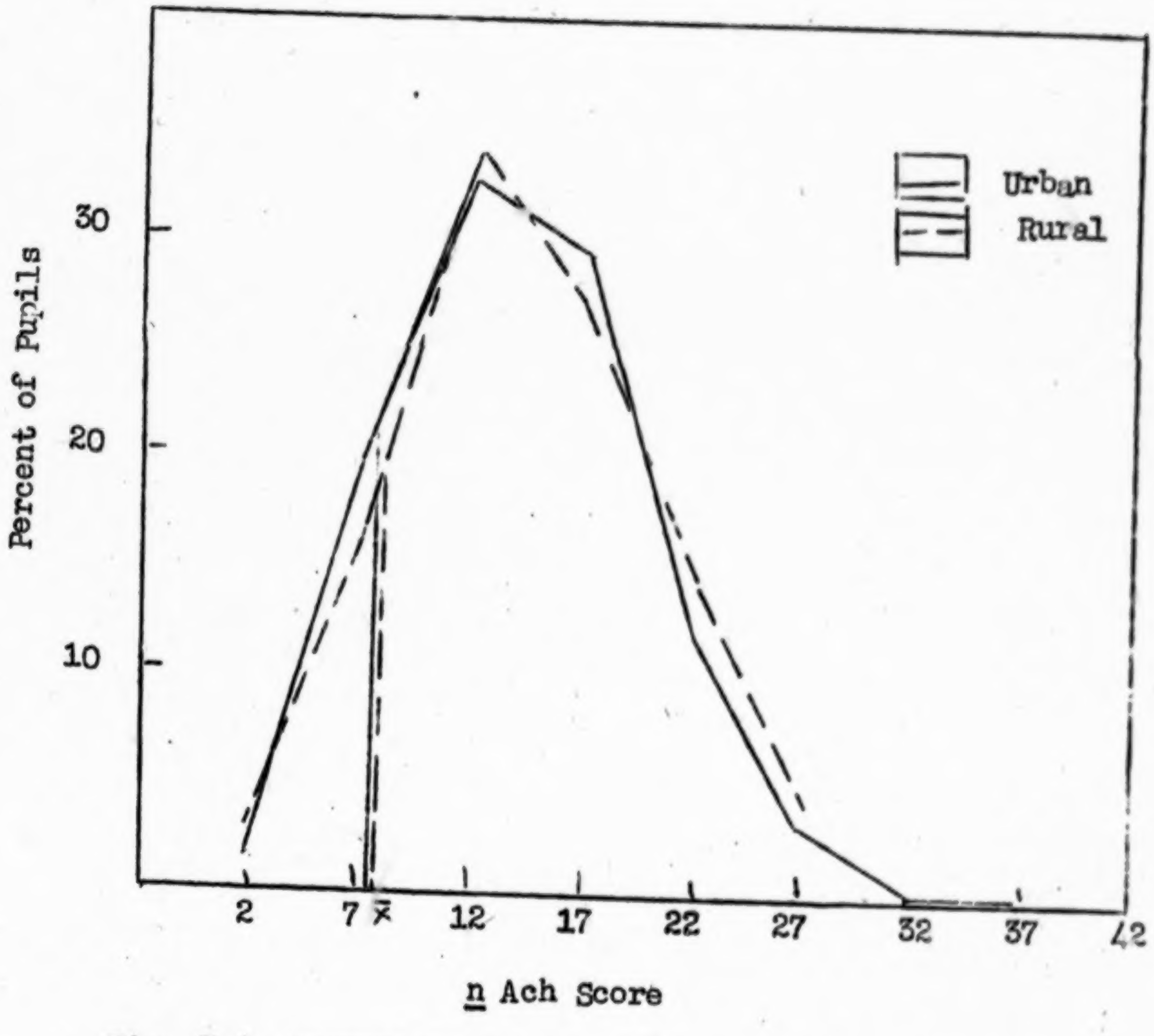
MEAN n ACH BY GEOGRAPHICAL LOCATION OF SCHOOLS

	N	No. of Schools	Mean n Ach	t	
Rural	97	4	7.29	.27	NS
Urban	878	28	7.12		
Combined	975	32	7.14		

n Ach by Schools Achieving Status

Fifteen schools ranked high and 17 low in their achieving status (AS). The former contributed 551 Ss and the latter 424 with mean n Ach scores of 7.48 and 6.70 respectively ($t = 2.10$; $P < .05$) as seen in Table 3.7. The pupils studying in schools with High AS, therefore, appeared to show higher n Achievement than those studying in schools with Low AS.

The High AS meant that the pupils of the concerned schools showed higher school achievement at the final secondary school examinations than the pupils of the Low AS schools. The High AS school pupils also showed a higher



Fir. 3.4 DISTRIBUTION OF n Ach SCORES FOR RURAL & URBAN GROUPS

TABLE 3.7

MEAN n Ach BY SCHOOL ACHIEVING STATUS

Achieving Status	No. of Pupils	No. of Schools	Mean n Ach	t
High	551	15	7.48	2.10*
Low	424	17	6.70	
Combined	975	32		

* Significant at .05 level

n Achievement level. Can the greater school performance of the High AS school be attributed to their n Achievement? Or do the High AS schools provide better educational environment which boosts both the n Achievement as well as the school achievement? As seen in Table 3.5, all schools which were rated High in SES (i.e. catering to boys from the higher socio-economic sections of the community) showed. High AS. In fact Low AS school group included no High SES school. Is it really the High SES character of the pupils in High AS schools which is responsible for boosting both, their n Achievement level and the school performance? The results in Table 3.8, 3.9 and 3.10 provide some information in this regard.

The school SES was found to be significantly related to the pupils n Achievement levels ($F = 3.40$; $P < .05$). The Ss from the High SES and Low SES schools revealed similar n Achievement, where as the former showed higher n Ach than the Ss from the Middle SES schools ($t = 2.56$;

$P < .05$) as seen in Table 3.9. The High SES schools can be assumed to provide better educational facilities than the Low SES schools. In fact five of the six High SES schools (See Appendix I) are private schools known for better educational facilities. The difference in educational facilities between High SES and Low SES schools did not, therefore, seem to produce difference in their pupils' achievement motivation, although these facilities do seem to produce differences in school achievement (all High SES showed AS and all Low SES). The High and Low SES schools

TABLE 3.8

COMPLETE ANALYSIS OF VARIANCE IN MEAN n ACH BY SCHOOL SOCIO-ECONOMIC STATUS

	df	SS	MS	F
Between Groups	2	222.0812	111.0406	
				3.3970*
Within Groups	971	31739.6488	32.6875	
Total	973	31961.7300		

* Significant at .05 level

TABLE 3.9

MEAN N Ach BY SOCIO-ECONOMIC STATUS OF SCHOOLS

SES	No. of Pupils	Mean n Ach	Mean Difference	t	P
1. High	218	7.98	1 and 2	1.41	NS
2. Low	182	7.21	1 and 3	2.56	.05
3. Middle	575	6.80			
Combined	975	7.14			

also differed in verbal intelligence of their pupils (chi square 54.25; df = 14 ; $P < .001$). The difference in intelligence levels may be another factor contributing to the difference in the academic achievement level of the High and Low SES schools. How can we then explain the difference in the *n* Achievement level of Ss from High SES schools and those from middle SES? Which factors helped bring up the *n* Achievement in Low SES schools to the same level, if not higher, as the Ss in Middle SES schools? With AS controlled, High SES and Low SES separately showed higher *n* Ach scores than Middle SES schools, as seen in Table 3.10. The Ss from schools both High SES (HSES) and AS(HAS) showed only slightly higher *n* Achievement level than the Ss from schools with LSES and LAS when AS is controlled; Ss from HSES schools as well as from LSES schools showed higher mean n Achievement than Middle SES schools (respectively , $t = 1.72$; $P < .05$ and $t = 1.69$; $P < .05$) Ss Studying in schools with HSES and HAS showed significantly higher *n* Ach score than those studying in schools MSES and LAS ($t = 3.23$; $P < .01$).

The school AS had shown significant relationship with *n* Achievement (see Table 3.7) with the Ss from schools with high AS showing hither mean *n* Achievement. Table 3.10 shows, however, that with SES controlled the achieving status failed to show significant difference in n Achievement. On the other hand Ss studying in schools with HSES and HAS showed little difference in *n* Achievement with those studying in schools with LSES and LAS.

The results therefore point out the school SES, rather than AS as an important factor as for as n Achievement was concerned. Further more the school SES was found to be related to n Ach but not in linear way. The Ss from HSES school as well as from LSES showed about the same meen n Achievement.

TABLE 3.10

MEAN n Ach BY SCHOOL SES AND AS

Schools	N	Mean	SD
A High SES/High AS	218	7-98	5.41
B Middle SES/High AS	333	7.15	5.55
C Middle SES/Low AS	242	6.33	5.47
D Low SES/Low AS	181	7.21	5.02

	t	P
A-B	1.72	.05
A-C	3.23	.01
A=D	1.45	.10
B-C	1.75	.05
B-D	0.12	NS
C-D	1.69	.05

The results point out that the better known schools, with better and/or more educational facilities, show higher academic achievement than other schools, may be, by attracting pupils with high levels of intelligence. But the pupils from HSES schools did not show higher achievement motivation than those studying in Low SES schools with lesser educational facilities. We shall have to rurn to the pupil's home and non-school environment to understand the sources of differences and/or similarities in levels of their need achievement.

n Achievement and Father's Socio-economic Status

As stated earlier, each S got a score for his father's educational level (EL), occupational group (O G) and monthly income. These three scores were combined to yield a composite score and categories of High, Middle and Low socio-economic Status (Kuppuswamy, 1962). The distribution of Ss in these three categories of SES and their mean n Achievement scores and standard deviations are seen in Table 3.11. The results, both the mean scores as well as their standard deviations are strikingly similar (F ≡ 0.22; NS). Figure 3.5 shows as interesting comparison of mean n Achievement by school SES and by pupil SES.

TABLE 3.11

MEAN n Ach SCORES FOR DIFFERENT SES CLASSES

SES	N	Mean	SD
High	52	7.31	5.92
Middle	506	7.27	5.73
Low	285	7.00	5.64
Overall	853*	7.18	5.71

*The rest of the Ss did not check the SES Scale.

The mean n achievement scores for the High,Middle and Low SES as well as for the total sample was about 7.00 and their standard deviations near about 6.00 It was, therefore, clear that the fathers' SES was showing no relationship, with the boys level of n Achievement.

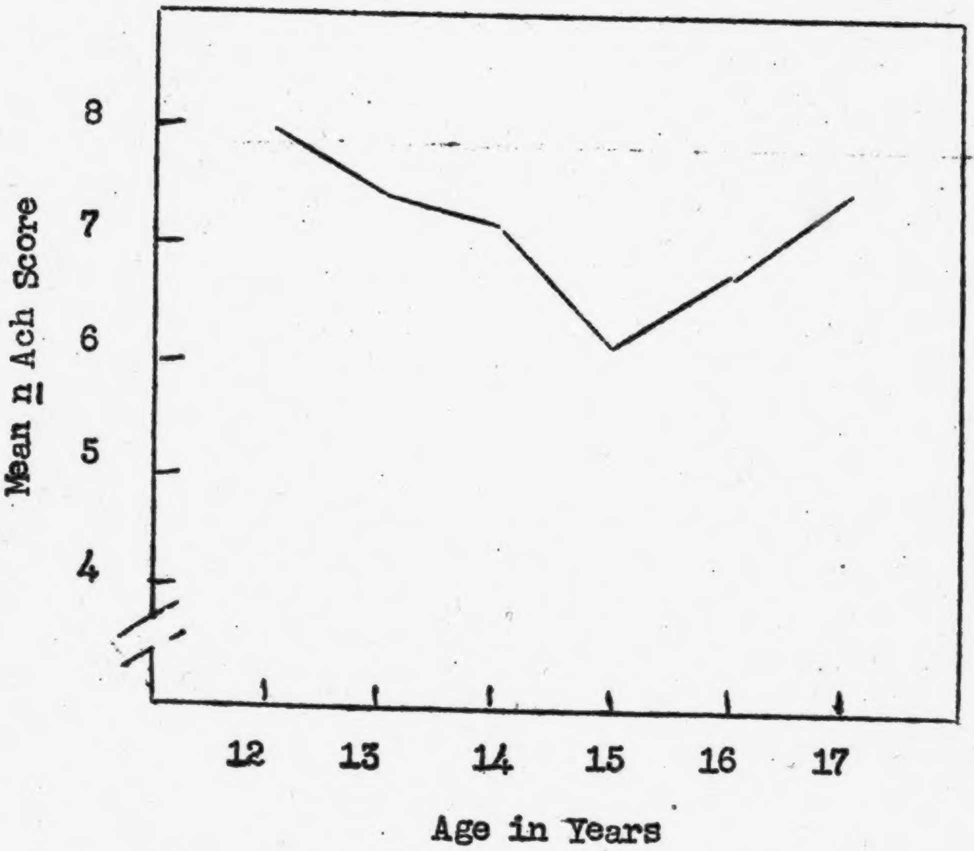


Figure 3.5 MEAN n Ach SCORES FOR DIFFERENT AGE GROUPS

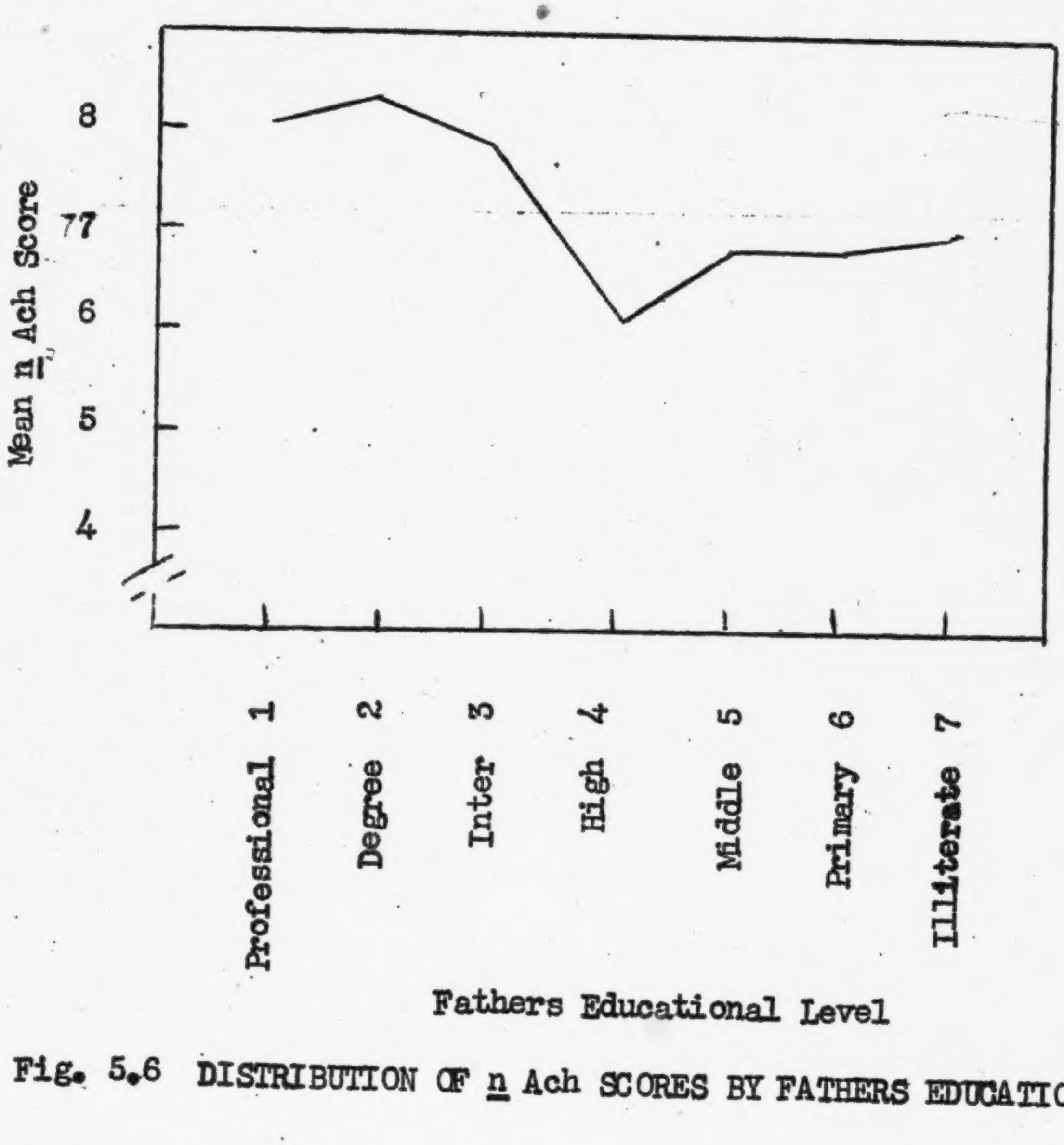


Fig. 5.6 DISTRIBUTION OF n Ach SCORES BY FATHERS EDUCATIONAL LEVEL

n Achievement Score and Fathers' Income

Every fifth of those SS for whom data on their fathers' income were available, composed a small sub-sample for this purpose. It was representative of Ss from all the 32 schools. The mean *n* Achievement score of this sub-sample ($N = 163$) was 7.27 against the larger sample mean of 7.8. The two mean scores were almost identical ($z = .1753$). The Ss, thus obtained, were distributed in five categories according to their fathers monthly income. This is seen in Table 3.13 alongwith their mean *n* Achievement scores and standard deviations.

TABLE 3.12

ANALYSIS OF VARIANCE OF n ACHIEVEMENT SCORES BY PUPILS SES

Source	df	SS	MSS	F	P
SES Class	2	0.5770	0.2885	0.2205	NS
Error	842	1098.7777	1.3080		
Total	842	1098.3547			

Ss belonging to income category II, i.e., next to the highest income group showed the highest mean *n* Achievement score of 10.26 with a SD of 7.52. The Ss coming from the highest income group (i.e. having a monthly income of Rs.750 and above) showed the lowest mean *n* Achievement of 6.00 with a SD of 4.71 which seemed lower than the Ss from the lowest income category (income of Rs.50 and less). The variations in *n* Achievement levels were however not significant (F=1.83; NS).

TABLE 3.13

MEAN n ACHIEVEMENT SCORES AND STANDARD DEVIATIONS BY FATHERS' INCOME GROUPS

Monthly Income Group	Categories	N	Mean n Ach	SD
Highest (Rs.750 & above)	I	9	5.00	4.714
	II	19	10.26	7.517
	III	39	6.79	4.210
	IV	72	7.29	5.510
Lowest (Rs.50 & below)	V	24	6.25	6.775
Total		163	7.27	

TABLE 3.14

ANALYSIS OF VARIANCE ON n ACHIEVEMENT SCORES BY FATHERS' INCOME GROUPS

Due to	df	SS	MSS	F	P
Between Classes	4	250.26	62.565	1.8281	NS
Within	158	5407.41	34.224		
Total	162	5657.67			

The fathers income is obviously a very important variable. As a matter of fact, the High SES schools tend to cater to higher income groups and the Low SES schools to lower income groups. No difference was found in n Achievement levels of boys in High and Low SES schools. It was, therefore, not surprising to find no difference in n Ach levels of boys from different income groups. It is perhaps not so much the income as such, which is important here, as how it is spent.

The fathers' income is an important component in Kuppuswamy's Socio-economic Status alongwith other two components namely: Fathers' educational level and the occupational group. Since the first component, i.e., the fathers income showed no significant relationship with Ss n Ach levels, it might have also lowered the significance of the relationship of n Achievement with the composite SES.

Mean n Ach by Fathers' Educational Level

Table 3.15 shows mean n Ach by Fathers' educational level (EL). The Ss whose fathers (and/or guardians) possess professional or semi-professional qualifications or possessed some kind of university education tended to show higher n Ach scores than others. Another interesting thing revealed by Table 3.15 in that Ss whose fathers either possessed little education or no education showed higher n Ach than those whose fathers possessed high school education.

An analysis of variance test revealed a very significant F value of 2.85. It was clear therefore that Fathers' EL had something to do with the Ss n Achievement levels, but Figure 3.6 also shows that this relationship was not linear. The n Ach levels did not increase with the increasing educational levels of Ss fathers. It was a curvilinear relation with higher n Ach at the extremes of the scale. The t test values recorded in Table 3.17 make this clear.

TABLE 3.15

PUPILS' MEAN n ACH SCORES BY FATHERS' EDUCATIONAL LEVEL

Fathers' Educational Level (EL)	Code No.	N	Mean n Ach Score	SD
Professional M.A. etc.	1	117	8.08	6.20
B.A. Degree etc.	2	134	8.36	5.59
Intermediate	3	46	7.93	5.47
High School	4	224	6.18	5.18
Middle School	5	96	6.87	6.05
Primary	6	133	6.88	5.61
Illiterate	7	94	7.13	5.81
Overall		844	7.18	5.71

TABLE 3.16

COMPLETE ANALYSIS OF VARIANCE IN n Ach SCORES BY FATHERS EDUCATIONAL LEVEL

Source	df	SS	MSS	F	P
Between EL Groups	6	22.0064	3.6677	2.85	.01
Within Groups	837	1077.5387	1.2873		
Total	843	1099.5451			

TABLE 3.17

n Ach MEAN DIFFERENCE BY EL GROUPS

EL Groups	t	P
Between 2 and 4	18.60	.001
3 and 4	10.29	.001
3 and 5	5.00	.001

The Ss whose fathers possessed university degree showed a very significantly higher n Ach than those whose fathers had high school education. The latters' n Ach level was also significantly lower than those whose fathers possessed intermediate education. The latter Ss also showed a significantly higher n Ach level than those whose fathers possessed middle school education. The results in Table 3.15 and 3.17 point out an interesting trend. Do pupils whose fathers possessed only little or no education possess higher n Ach level than those whose fathers had secondary education? To seek answer to the above question, the Ss were grouped into three following categories : (i) Those whose fathers possessed either professional education or an university degree or intermediate education were categorised as 'High' education group. (ii) Those whose fathers possessed secondary education remained in 'Secondary' education group and the rest were categorised as 'Low' education group, The mean n Ach results with respect to those groups are shown in Table 3.18. The tests confirmed that, the Ss belonging to the 'High' group showed considerably higher n Ach than those belonging to the 'secondary' group. All the differences were significant beyond .001

level. It could therefore be concluded that:(i) Fathers or guardians educational levels showed significant relationship with Ss n Ach levels; (ii) this relationship was not linear i.e., the n Ach did not uniformaly increase with their fathers' increasing educational levels and (iii) the Ss whose fathers showed 'Low' education showed higher n Ach levels than those whose fathers possessed secondary education. The V-shaped curve in Figure 3.6 shows this important result.

TABLE 3.18

n Ach MEAN DIFFERENCES BY FATHERS EDUCATIONAL LEVELS

Fathers EL	N	Mean n Ach	Groups	t	P
1. High Education	297	8.1818	1 and 2	20.2900	.001
2. Secondary Education	224	6.1830	3 and 2	7.7287	.001
3. Low Education	323	6.9504	1 and 3	13.15.74	.001

n Ach and Fathers' Occupation

Table 3.19 records pupils mean n Ach scores by their fathers occupations. Several results in this table draw attention. The highest mean n Ach score was shown by Ss whose fathers (or guardians if father not alive) were doing some semi-professional work. This included jobs like; Secondary school teaching; college lecturers; draughtmen; research and laboratory assistants; junior Government Officers; insurance inspectors and agents. Next in order were the Ss whose fathers were skilled and/or workers. Skilled workers included persons like: carpenters; mechanics; engine and car drivers; telephone and telegraph operators. Unskilled workers were persons like: peons; watch-men; domestic servants. The Ss whose fathers were doing professional group included persons like: engineers; doctors; university readers; professors; senior Government Officers; managers; big business-men; scientists; newspaper editors; advocates (F = 4.93; $P \angle .01$).

TABLE 3.19

MEAN n Ach SCORES FOR FATHERS' OCCUPATIONAL GROUPS

Occupational Group	Code No.	N	Mean Score	SD
Professional	1	139	6.29	5.79
Semi-Professional	2	130	8.23	6.01
Clerical-Petty-Shop-keepers	3	320	6.18	5.42
Skilled Workers	4	122	7.72	5.85
Semi-skilled workers	5	75	6.07	6.34
Unskilled workers	6	57	7.81	5.46
Overall		843	7.17	5.70

TABLE 3.20

ANALYSIS OF VARIANCE OF n Ach SCORES BY FATHERS' OCCUPATIONAL GROUPS

Source	df	SS	MSS	F	P
Occupational Groups	5	31.3929	6.2786	4.9313	.01
Error	837	1065.7032	1.2732		
Total	842	1097.0961			

Table 3.21 strikingly shows that the mean n Ach level of Ss belonging to the semi-professional group was consistently higher than that of Ss belonging to any other group. Ss belonging to the skilled workers group showed higher mean n Ach score than those belonging to the groups of professionals, clerks, shop-keepers and semi-skilled workers. Their n Ach score was lower than those belonging to the semi professional group and about the same as those of the unskilled workers group. Ss coming from the unskilled workers group showed a higher mean n Ach score than those coming from clerks and professional groups. Such Ss showed lower n Ach level than those from the semi-professional groups. Figure 3.7 shows this interesting zig zag trend in Ss' n Ach scores by their fathers' occupational groups.

TABLE 3.21

t - VALUES OF n Ach MEAN DIFFERENCES
BY FATHERS' OCCUPATIONAL GROUPS

Occupational Groups	1	2	3	4	5	6
1						
2	13.500**					
3	--	17.57**				
4	9.96**	3.38**	13.09**			
5	--	12.09**	0.78	9.36		
6.	8.46**	2.27*			0.92	

* Significant at .05 level

** Significant at .01 level

It is clear therefore from the results recorded in Tables 3.19 and 3.21 that: such IX class boys whose fathers were following some semi-professional vocation showed consistently higher mean n Ach level than other boys.

n Achievement in Lower Middle Class Boys (Clerical, Small Shopkeepers and Shop Employees Groups) by their Fathers Educational Level

Boys of fathers with Low educational level were found have lower n Achievement level than those of fathers with High EL and Higher n Ach level than those of fathers with Middle EL (Table 3.18). The data were analysed for the different EL groups with in the lower middle class group alone (occupational group of clerks, small shopkeepers and shop employees), which are presented in Table 3.22. ~~The boys~~ The boys of fathers with High EL continued to show higher n Achievement, but the boys of fathers with Low EL failed to show higher n Achievement than those of the boys of fathers with Middle EL.

TABLE 3.22

MEAN n ACHIEVEMENT IN LOWER MIDDLE CLASS BOYS* BY THEIR FATHERS EDUCATIONAL LEVEL

Fathers EL	N	Mean n Ach	t Value		P
A. High	41	7.41	A-B	2.47	<.05
B. Middle	40	3.70	A-C	3.20	<.01
C. Low	39	3.50	B-C	0.88	NS

* From a small randomly drawn sub-sample of 273 Ss from all occupational groups.

n Achievement of Boys of Fathers with Low EL by Fathers Occupational Groups.

The boys with lower middle class background had shown lower n Achievement level than those with working class background (i.e., fathers in skilled and unskilled occupational groups as seen in Table 3.19). This result was further confirmed when data were analysed after controlling the fathers educational levels, as seen in Table 3.23. The lower middle class boys of fathers with Low EL showed a considerably lower n Achievement than working class boys of fathers with Low EL ($t = 3.39$; $P < .01$).

TABLE 3.23
MEAN n Ach OF BOYS WITH FATHERS' LOW EL BY
FATHERS OCCUPATIONAL GROUPS

Occupational Groups	N	Mean n Ach	Mean Differences	t	P
3. Clerical/Shopkeepers	39	3.50	3 and 4	3.85	.01
4. Skilled workers	33	7.20	3 and 5	2.26	.05
5. Semi-skilled workers	21	6.41	3 and 6	1.08	NS
6. Unskilled workers	8	5.59	4 and 6	0.73	NS
A. (4, 5 and 6 combined) Blue Collar workers	62	6.92	A and 3	3.39	.01

These boys (i.e, working class with Fathers of Low EL) tended to show somewhat lower n Achievement, although statistical not significant, than the lower middle class boys of fathers with High EL. Examination of results in Tables 3.22 and 3.23 suggest that both the fathers educational level as well as occupational status tended to show important bearing on n Achievement of high school boys. The higher educational level of fathers in the clerical group and the working class occupation of the fathers in the Lower EL group were found to show higher n Achievement than the boys respectively in the clerical group and the Low EL group.

School, Social Class and n Achievement Characterstics

As reported above, n Achievement levels showed differences for certain school and social class variables. Do the n Achievement components also show any definite differences for school and social class?.

Inter Relationship of SES Characteristics

The results reported above indicate curvilnearity in n Achievement both by fathers occupational group and their educational level. The sons of fathers in semi-professional occupations and those in sleilled work showed higher n Achievement as compared to those of fathers engaged in some clerical work. Similar curvilinear results were obtained for sons of fathers with High EL, Secondary EL and Low EL. The above results suggested high positive correlation between fathers educational level (EL) and occupational Group OG). The correlations between the two (i.e. EL and OG) was .754 (N=844) the two (i.e., the father EL and OG) respectively showed r's of .820 and .815 (N=844) with the composite pupil SES. The results showed that any one or both, EL and OG, were indicators of the pupil SES.

Mean n Achievement by Pupils AGE

Ss belonged to the same school grade, i.e., II class, but to different age groups. Four Ss were below 12 years of age, four were 18 years, two 19 years and one was 20 years old. These pupils were eliminated from the analysis because of inaddquate numbers. Some pupils did not indicate their age, therefore they also had to be omitted from the analysis. The obtained mean n Achievement scores for the remaining Ss in the age group from 12 to 17 are shown in Figure 3.5.

Figure 3.5 reveals an interesting trend in n Achievement by age groups. The highest mean n Achievement of 8.02 was obtained by 12 years old boys. The mean n Achievement scores show a V-shaped curve. However, an analysis of variance test revealed a non-significant value of 1.45, as seen in Table 3.24.

TABLE 3.24

COMPLETE ANALYSIS OF VARIANCE IN n Ach SCORES BY AGE

Source	df	SS	MSS	F	P
Between Groups	9	415.1101	46.1233	1.45	NS
(Error) within Groups	744	23707.3037	31.8646		
Total	753	24122.4138			

The curve in Figure 3.5 is similar to curves in Figure 3.6 and 3.7 indicating trends in n Achievement by fathers educational level and occupational groups. Do more younger boys in class IX have fathers with High EL and those in some kind of semi-professional occupation 2. And do more older boys in class IX have fathers with Low and those in some kind of skilled or unskilled work? In any case, the results by age groups further indicated curvilinearity in n Achievement.

Task Related Imagery

As seen in Table 3.3 nearly 46% of the obtained stories were coded as task related. These stories contained some imagery, closer to achievement but which failed to meet any of the criteria for achievement imagery. About 37% subjects from High SES schools, 31.3% from Middle SES and 23.8% from Low SES showed 3 or more of their stories as task related. The Low SES school Ss tended to show significantly lower number of TI stories (chi square 16.32; df=6; P∠.02) as seen in Table 3.25. These results supported the earlier trend for the Low SES school Ss to show higher *n* Achievement (and lower TI than subjects from Middle SES schools).

TABLE 3.25

CONTINGENCY TABLE OF SCHOOL SES AND TI SCORES

Number of TI Stories	School-S Status			Total	% age
	High	Middle	Low		
0	3.2	4.7	8.8	50	5.1
One-Two	40.1	38.7	44.8	391	40.1
Three	19.4	25.5	22.7	230	12.6
More than three	37.3	31.3	23.3	303	31.3
N =	217	576	181	974	
% =	23.3	59.1	18.6		

Chi square = 16.322; df = 6; P∠.02

Subjects studying in rural schools showed considerably lower number of TI stories than those studying in urban schools (chi square 39.24; df = 3; P∠.001). About 34% of the urban school Ss showed 3 or more of their stories

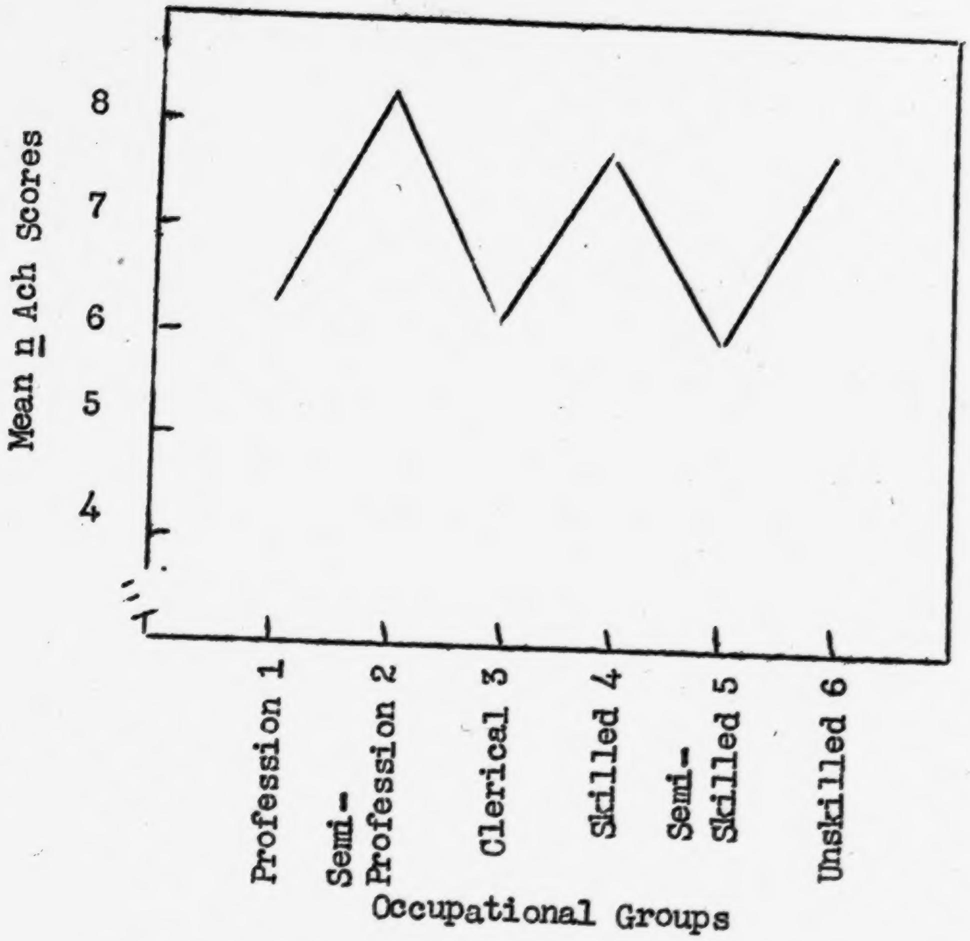


Fig. 3.7 MEAN n Ach BY FATHERS' OCCUPATIONAL GROUPS

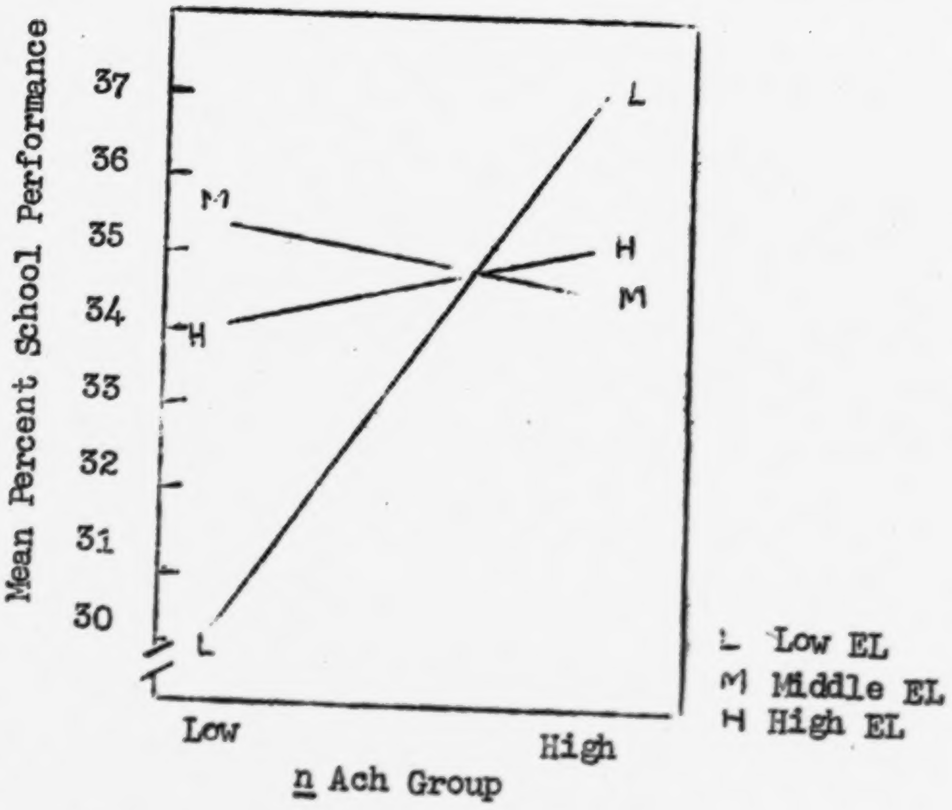


Fig. 4.1 ACADEMIC PERFORMANCE BY n Ach FOR FATHERS' EDUCATIONAL LEVEL

as task related against only 8.2% of the rural Ss. The fathers' educational level also showed significant relationship with the number of TI stories produced by the subjects (chi square 50.44; df = 21; $P < .001$). Here again the trend was more TI stories from boys of fathers with High EL was well as of fathers with Low EL. Subjects with low SES showed lesser stories with TI than subjects from high and average SES as seen in Table 3.26. The boys of fathers with semi-professional, clerical, semi-skilled and un-skilled occupations tended to show higher rate of TI stories. (chi square 48.25; df = 18, $P < .001$). The school AS did not show any difference in the rate of TI stories.

TABLE 3.26

CONTINGENCY TABLE OF S-E STATUS AND TI SCORES

Number of Stories with Task Imagery	S - E Status				Total	% Age
	Not. Av.	High	Average	Low		
0	11.5	3.8	3.6	5.9	50	5.2
One-Two	53.1	34.0	40.0	35.3	381	39.8
Three	24.8	26.4	21.8	26.2	227	23.7
More than three	10.6	35.8	34.7	32.5	299	31.2
N =	113	53	505	286	957	
% =	11.8	5.5	52.8	29.9		

Chi square 38.156; df = 9; $P < .001$

Need

As stated earlier Need was as one component which was found in a larger number of stories. About

52% subjects showed two or more stories containing Need as one of the component; 28.7% showed one story with Need. Only 19,1% of the stories were found to contain no need component.

Fathers educational level (EL) and occupational group (OG) were found to be significantly related to the verbalization of Need in the obtained stories (chi square 32.75; df = 21; $P<.05$) and chi swuare 38.03; df = 18; $P<.01$ respectively). The boys of fathers with High and Low EL tended to show greater expression of Need than the subjects from Middle EL. Similarly, boys of fathers in professional, skilled and unskilled occupational groups showed higher rate of Need than the Ss from the clerical group. This pattern was similar to the one found for n Ach. The school AS and SES and the pupils SES did not show any significant relationship with expression of Need.

Instrumental Activity

Instrumental Activity was another strong component which was found verbalised in a large number of stories. Only 15.5% of the subjects showed stories containing no instrumental activity. Rest of them contributed 1,2 or more stories containing Instrumental Activity.

School SES showed significant relationship with verbalisation of Instrumental Activities. The Ss from High SES and Low SES schools tended to show greater verbalisation than those from Middle SES schools. The school AS, pupils' SES and their fathers EL and OG not show any significant relationship with this component.

Blocks from Within and Outside

Blocks from within and without (Bp and Bw) belonged to the category components which was shown by very few stories. Only 2.5% of the subjects showed some Bw and 3.2% showed some Bp.

The schools AS and SES showed significant relationship with the verbalisation of Blocks from within (Bp). About 4.5% Ss from High AS against 1.4% from Low AS schools showed slight verbalisation of some personal shortcoming or block (chi square 7.49; df = 1; $P < .01$). About 6.5% from High SES, 2.6% from Middle SES and 1.1% from Low SES showed this behaviour as evidenced in their stories (chi square 10.69; df=2; $P < .01$). The fathers occupational group also showed significant relationship with this category (chi square 13.26; df = 6; $P < .05$). About 7.2% and 5.4% Ss respectively from professional and semi-professional groups showed this component in their stories against 2.2% from clerical group, 2.5% from skilled, 2.5% from semi-skilled and 1.8% from un-skilled occupational groups. The school location, pupils' SES and their fathers educational level did not show any significant difference in this respect. About 6.2% of rural Ss against 2.1% of urban showed some verbalisation of outside difficulties (bw). (chi square 6.22; df = 1; $P < .02$.) It was interesting to find more High SES Ss giving expression to personal difficulties (example: 'He became nervous and failed at the exam.') than those with Low SES: It was equally interesting to see rural Ss giving expression to enrironmental difficulties (example: Due to poverty he could not go to college) more than the urban.

Emotions

Emotions, either positive or negative, was another component shown by very few stories. About 17% of the subjects showed positive emotion (G+) and 13% showed negative emotion (G–). Fathers occupationsl group showed significant relationship with verbalisation of positive emotion (G+) and school AS with negative emotion (G–). About 22% subjects from professional group and 27.7% from semi-professional group showed some G+ against 12.2% from clerical; 13.9% from the skilled; 10.7% from semi-skilled and 14.0% from unskilled occupational groups (chi square 21.81; df = 6; $P < .01$). Two percent Ss from High AS schools against 0.5% from Low AS showed some G– in their stories (chi square 4.19; df = 1; $P < .05$).

Help

The overall tendency of the verbalisation of this category was very low. Only 0.7% of the total sample showed evidence of this behaviour (getting help from others) in their stories. The boys studying in schools with High AS expressed this more than those in Low AS schools (chi square 5.40; df = 1; $P < .02$).

Achievement Thema

The school AS, the fathers O C and EL showed significant relationship with the evidence of achievement Thema (Ach Th). More boys in High AS schools produced stories with achievement as their central thema than those in Low AS schools (chi square 7.94; df = 3; $P < .05$). More boys of fathers with High EL showed this component than those of fathers with Low EL (chi square 22.17; df = 21; P$\angle$.01). More Ss from semi-professional, skilled and unskilled workers groups showed this behaviour than those from other occupational groups (chi square 21.43; df=18; P$\angle$.01).

The overall expression of goal anticipation and positive affect was low, with 5.6% Ss showing some Ga-, 13.6% some Ga+ and 16.6% some G+. The school and social class variables showed us no difference in the expression of these components.

Some Implications

The overall low expression of certain components in stories written to pictures and a large number of task related (TI) stories raise several questions of theoritical and practical importance. Do the teen age boys tend to suppress verbalisation of goal anticipation, affect, held and blocks? What are those factors which prompt this suppression? Is it a methodology question associated with the use of thematic apperception, a particular set of stimuli and/or questions? While the expression of some of the above components tend generally to be low, as seen for example, in the analyses of readers reported in Table 3.3, these have been extremely low in the present study. It would be worthwhile to attempt answers to such questions raised above.

The expression of n Ach components and production of TI stories has practical implications for Achievement Motivation Training. The TI stories stand closer to AI stories. With little training such Ss might be able to raise their task related imagination to achievement related one. Similar specific training to verbalise componen s would lead to a higher n Achievement.

Discussion

What then is level of n Achievement in our High school boys? Comparately speaking the Delhi school boys with a mean age of about 14 years were found to show n Achievement level comparable with the levels shown by ten age boys in German and U.S. studies, and lower than Japanese and Brazilian boys. The results were perhaps not strictly comparable as different pictures were used in different studies. Further, six pictures were used in the present study and the average score was adjusted to four pictures for comparision with other results obtained on 4 pictures. Not withstanding these limitations, the results point out interesting trends. The USA and German represent the most advanced western capitalist economy. These countries have long history of industrialisation and technological advance. The facilities and opportunities provided to youth in these countries have been undoubtedly more than those available in our boys. We have suffered long economic and political exploitation under a foreign power. Poverty has been proverbial with us with a very low per capita income. Our economy is still underdeveloped and at this moment we are struggling to take off in industrialisation including agriculture. The educational facilities have therefore been inevitably limited. Under these conditions, it is remarkable to find Delhi boys showing n Achievement level as high as or equal to that shown by the German and U.S. boys.

The Japanese result has been reported by McClelland wit a footnote; 'By mistake another picture highly saturated with achievement cues was presented first in Japan showing a scientist working in a laboratory. The results for this picture are not included but it may have affected the achievement imagery in subsequent stories, though probably not to an extent sufficient to account for the much higher average n Achievement score in Japan. Also the pictures were re-done in Japan to present Japanese faces and clothing' (1961, p.480). Japan is one Asian country which has shown rapid and significant economic growth during this century. A higher n Achievement in Japanese boys is therefore understable in this context. Brazil, unlike Japan, is a western country and like ours a developing one. They have also, like us, suffered economic exploitation by outside powers. The Brazilian people have also been struggling to develop. The Delhi high school boys showed a little lower level of n Achievement as compared to the Brazilian boys.

The above comparisions were made on the basis of certain available data, in order to get a clearer understanding of the obtained n Achievement level in our high school boys. Their achievement motivation seemed well comparable with that of boys from some industrially advanced countries, but lower than that of the boys in some Asian countries like Japan and some other developing countries like Brazil.

Differences in n Achievement Levels by Social Class

Research studies particularly in the US (Rosen, 1956 and 1959; Strodtbeck, 1958, Veroff, 1960) have found Ss from middle social class to have higher n Achievement than those from the working class. The present investigation has revealed a different trend. Sons of fathers having 'low' education and those of fathers doing some kind of skilled or unskilled work (working class - blue collar) appeared to show higher n Achievement than those whose fathers had secondary education and those whose fathers were reported as doing some kind of clerical work either in the Govt. or outside. Petty shopkeepers were also included in the category. The Low SES Ss (SES on the basis of fathers EL and OG) therefore revealed higher n Achievement than Middle SES Ss. This finding got confirmation from the results with schools SES. The Low SES school Ss (rated as catering to the low SES pupils) showed n Achievement level equal to the High SES and higher than Middle SES schools. The V-shaped curves, in some cases clear, in some cases little erratic, revealed the depressing trend in the n Ach of middle categories of school SES, and social class based on fathers EL and OG. The finding therefore appeared definite in showing the Low SES to possess higher n Achievement level as compared to the Middle SES subjects.

The Low SES Ss make an interesting comparision with Ss with High SES. The Low SES schools showed n Achievement level as high as that shown by the High SES schools. Occupationally, boys of 'skilled worker' fathers showed; higher n Achievement level than those fathers doing professional work. The latter included high Government Officers, senior engineers, top business-men and similar high ups'; but lower than boys of fathers doing som semi-professional work. The latter included jobs like ollege and secondary teachers, commission and insurance agnts, junior Govemment officers, junior engineers and dctors. These persons were all with good education who may be described as 'the struggling elite'. The Ss from this occupational class showed the highest n Achievement level. Within the 'upper' class this group of people can b described as 'lower - upper class', i.e., next to the top most social class. Within the middle class, these people can be described as 'upper middle class' i.e, higher than the class of clerks. In this respect the present study supported the results of certain studies (e.g., Rosen, 1959 and Strodtbeck, 1958) showing the middle class or white collar groups possessing highr n Achievement level than the working class or the blue collar.

The results discussed above really raise the question: who constitute middle class in India? While there is no place here for any elaborate discussion suffice it to point out that social class categorised as High, Midle and Low may not be a good indicator. The fathers occupation may be a better indicator of social class. Accordingly, the Ss from the upper middle class (Semi-professional occupations) were the highest and those from the working class (skilled and unskilled workers) the next highest on n Achievement. The boys from the 'Upper Class', the lower middle class (clerical occupations) took lower positions. McClelland reported somewhat similar results for his Japanese subjects (1961, p.270) with a hint for a higher n Achievement level in working class Ss, next only to that of the upper middle class Ss.

The results on n Achievement and social class appeared in some respect, different from the results of similar studies elsewhere, particularly in U.S.A. There were no data in the present investigation that could throw light on the factors responsible for different results. The results would have to be tested in similar replicative studies elsewhere in the country. Further research with certain 'intrinsic' factors, mentioned below may prov: useful in this regard.

The Intrinsic Factors

The research on 'instrinsic' determination of n Achievement has concentrated on the family. Winterbottom (1958) found mothers of sons with high n Achievement inclined to expect and promote 'self reliant mastery' at earlier ages than mothers of sons with low n Achievement. They put fewer restrictions on their sons than the mothers of sons with low n Achievement. The former tended to provide self reliance training in their sons earlier than imposition of restrictions. The latter imposed more restrictions and put them before they started any independence training in their sons. In the latter case, the sons remain more dependent on adults both for achievement help and restricted behaviour, for a longer period of time. McClelland (1955), and Rosen (1959) found middle class groups (in USA) significantly more likely to exhibit attitudes that were more encouraging of early indepdndent accomplishment than the working class groups. Bronfenbrenner's (1958) and Felds (1960) reviews point out that the child training attitudes of the middle class parents are characterised by higher expectations for independence and achievement.

The process of socialisation of the child and the child learning practices employed for socialisation, seem to be the key for the development of achievement motivation. The family and the interaction of families are obviously important factors in the process. The absence of differences in n Achievement of High SES and Low SES schools point out the family and some non-school agencies as the source of the difference in n Achievement levels. The lower SES or the working class Ss have shown n Achievement higher than lower middle class Ss. Do the working class parents (in India) father and/or mother, tend to encourage early independence training in their sons? Do they grant more autonomy, impose fewer restrictions on their sons than lower middle class or the upper class parents whose sons have shown lower n Achievement? Do fathers with 'Low' Education tend to encourage more and early self reliance in their sons than fathers with secondary education? Or are there any other attitudes and values which differentiate the parents of boys with high n Ach from the parents of 'Lows'? The present investigation was designed only to raise such questions. Further systematically designed studies alone can provide the answers.

CHAPTER 4

NEED ACHIEVEMENT AND SCHOOL PERFORMANCE

One of the major objectives of the present investigation was to find out the relationship between Achievement motive and school performance. As statedin Chapter 1, it was intended to study the relationship of n Achievement with both, the academic performance and the performance in cocurricular activities. For the latter, the teachers were requested to check a proforma indicating the number and name of activities in which pupils generally participated. The information thus received, revealed that over 75% of the Ss were taking part in no such activities. In fact, most schools lacked such facilities. The study therefore was confined to the academic performance.

The information on n Achievement was collected in February - March,1965. Following this, the Ss took their regular annual examination in April 1966. They came from 32 Delhi Higher Secondary School, each one of which gave its own examination. The total marks obtained by the Ss at annual examination as well as the marks in Hindi, English, Mathematics, Science group subjects (combined) and non-science group subjects (combined) were collected from the respective schools. The science group includes Physics, Chemistry, Mathematics or Biology and the non-science group included optional subjects other than science, like commerce, Economics, History. The marks thus obtained were converted into percentages.

As the marks were derived from different school examinations, they were not directly comparable. All the schools, however, are affiliated to the same Board of Secondary

Education. They follow same curriculum and the system of examination as prescribed by the Board. Moreover, the schools came from different socio-economic and achieving status. They were in good number, 32 from all parts of Delhi. It was, therefore, assumed that, though derived from different tests, marks when combined and averaged would be good and stable indicators of school performance. The marks thus combined and averaged, were used in certain analyses. Certain other analyses were done school wise; for a group of ten schools, found on the Bartletts test, to be homogeneous and for small groups of Ss drawn at random from the larger sample.

Correlation of n Ach with Marks in School Subjects

Table 4.1 records correlations of n Ach scores with marks in various school subjects for the combined sample. The correlations ranged between .085 and .179. All the correlations were significant. The n Ach scores showed highly significant positive relationship with marks in English and Mathematics, and the total marks ($P < .005$); good positive relationship with marks in science subjects ($P < .01$) and marks in Hindi and non-science optional subjects ($P < .05$). The weak correlations of n Achievement with marks in Hindi and non-science optional subjects draw attention. The n Achievement also showed positive correlation with intelligence ($r = .143$; $P < .01$).

Academic Achievement and n Ach Characteristics

Does the performance show any different relationship with the n Ach Characteristics or sub-categories? Table 4.2 records correlations of Achievement Imagery (AI) and 10 sub-categories with marks in various school subjects. It is seen that total n Ach score tended to show higher correlations with academic performance than the sub-categories in most of the cases. Within the sub-categories Need (N), instrumental Activity (I) and Achievement Thema (Ach Th) seemed to show higher correlations, all positive and highly significant, than other sub-categories. It was interesting to note that out of 82 correlations only two were negative of which one, between negative affect (G^{-}) and performance in non-science optional subjects was significant ($P < .05$).

n Achievement and Performance in Different Schools

Correlations were computed for such schools only, which had N of 20 or more. Twenty six schools provided these results, presented inTable 4.3. The table reveals certain interesting results: (i) The negative correlations were very low and not significant; (ii) The Low AS schools with Middle and Low SES showed no significant relationship; (iii) The significant positive correlations, all shown by High AS schools, ranged between .27 and .50; (iv) The verbal intelligence test scores similarly showed low positive correlations with school performance. The Low AS schools showed week positive correlations, some not significant, ranging between .16 and .44. The High AS schools showed somewhat stronger correlations ranging between .08 and .50. The highest correlation of intelligence with school performance was .50. Coincidently, the highest correlation shown by n Achievement with school performance was also .50. It should be recalled here that n Achievement, as seen in Table 4.1, showed although low, but much more significant

TABLE 4.1

n ACHIEVEMENT AND SCHOOL PERFORMANCE : INTERCORRELATION MATRIX (PRODUCT MOMENT)

Variables	1	2	3	4	5	6	7	8	9
1. n Ach									
2. AMI (Total)[a]	175[c] *(973)								
3. Intelligence	143[c] (974)	068[b] (972)							
4. Total Marks	179[c] (894)	109[c] (893)	328[c] (893)						
5. Marks in : English	171[c] (895)	114[c] (894)	337[c] (894)	660[c] (894)					
6. Hindi	097[b] (553)	003 (552)	173[c] (552)	536[c] (552)	489[c] (553)				
7. Mathematics	118[c] (844)	067[b] (844)	204[c] (843)	683[c] (843)	589[c] (844)	470[c] (502)			
8. Science Group	134[b] (343)	093 (342)	307[c] (343)	815[c] (343)	588[c] (343)	NA	590[c] (340)		
9. Non-Science Group	085[b] (562)	006 (561)	086 (561)	693[c] (562)	482[c] (562)	472[c] (552)	534[c] (511)	NA	

[a] Results on this instrument are reported in Chapter 6.
[b]. Significant at .05 level.
[c]. Significant at .005 level.
*Figures in parentheses show N in each case.
NA No Hindi students in Science group.

TABLE 4.2

CORRELATION MATRIX OF ACADEMIC PERFORMANCE AND n ACHIEVEMENT VARIABLES

School Performance Variables	N	AI	N	I	Ga+	Ga-	Bp	Bw	Nup	G+	G-	Ach Th
Total Marks	894	.107^b	.168^c	.176^c	.057^a	.021	.068^a	.054^a	.039	.101^b	.032	.135
Marks in English	895	.119^b	.188^c	.181^c	.022	.039	.062^a	.046	.041	.029	.046	.139
Marks in Hindi	563	.031	.090^a	.118^a	.049	.082^a	.081^a	.073	.028	.065	-.057	.128^c
Marks in Maths.	344	.068^a	.125^c	.127^b	.040	.018	.050	.071^a	.002	.040	.015	.092^c
Marks in Science Subjects	343	.053	.144^b	.204^a	.055	.012	.053	.016	.011	.048	.102^a	.080
Marks in Non-Science Subjects	562	.036	.061	.085^a	.037	.035	.072	.082^a	.045	.033	-.074^a	.068

a. Significant at .05 level.

b. Significant at .01 level .

c. Significant at .001 level.

TABLE 4.3.

PRODUCT MOMENT CORRELATIONS OF ACADEMIC ACHIEVEMENT WITH n ACHIEVEMENT AND INTELLIGENCE BY SCHOOL ACHIEVING STATUS AND SCHOOL SOCIO-ECONOMIC STATUS

	School Code No.	N	n Ach/ Academic Performance	Intelligence/ Academic Performance
High SES/ High AS	4	48	.27*	.12
	7	39	.01	.50**
	9	30	.50**	.40*
	10	38	-.13	.08
	12	33	.19	.43**
Overall for HSES		188	.06	
MIDDLE SES/ LOW AS	01	36	.19	.32*
	3	38	-.04	.30*
	6	30	.13	-.05
	11	29	-.03	.35*
	13	41	.42**	.34*
	15	35	.09	.31*
	16	44	47**	.43**
	19	50	.19	.31**
MIDDLE SES/ LOW AS	5	35	.22	.18
	14	34	.06	.27*
	17	24	-.04	.36*
	18	30	-.01	.37*
	20	36	-.01	.16
	21	27	.21	.39*
LOW SES/ LOW AS	23	27	.15	-.17
	24	25	.02	.44**
	26	23	.18	.26
	29	23	.08	-.12
	30	42	.17	.23
OVERALL for LSES		179a	.23	

* Significant at .05 level

** Significant at .01 level

a. Include schools with less than 20 boys for which individual correlations were not computed.

relationship with the combined total marks (combined and averaged over 32 schools)(r = .179; P∠.005). The academic performance as expressed in the combined total school marks showed weak positive relationship between n Achievement and school marks (chi square 3.34; df = 1; P∠.10). The overall results indicated a definite positive tendency in the direction of prediction.

Partial Correlations

The n Achievement continued to show low but significant correlation with total school marks (partial r = .26; P∠.05) as well as marks in English (partial r = .29; P∠.025) when differences in intelligence scores were controlled. The n Achievement scores showed higher correlation with school performance (r=.27; P∠.05) than with intelligence (r = .20; P=NS). The n Achievement also showed greater correlation with total marks, in this particular school, than intelligence scores (r = .12; NS). While the value of n Achievement score- in predicting school performance was found to be low or at best moderate, the partial correlations recorded in Table 4.4 suggested encouraging trend towards the direction of prediction.

Need for Achievement and Academic Achievement by School SES

Table 4.3 showed that such Low SES schools which had of 20 or more showed no relationship between Need for Achievement and academic achievement, whereas some schools with High SES showed significant positive relationship. The combined group of boys studing in Low SES schools showed a positive r = .26 (P.∠.01) between

TABLE 4.4

ORDINARY (PRODUCT MOMENT) AND PARTIAL CORRELATIONS BETWEEN n ACHIEVEMENT, INTELLIGENCE AND SCHOOL PERFORMANCE

Variables	N	r	Partial r
n Ach and Intelligence	46	.20	
n Ach and Total Marks[a]	46	.27[b]	.26[b]
n Ach and Marks in English[a]	46	.31[c]	.29[c]

a. Intelligence controlled.

b. Significant at .05 level.

c. Significant at .025 level.

n Achievement and school performance and the boys in High schools showed r = .06. These erratic results at the outset suggest that other factors in schools or outside and/or in persons might heighten or dampen this relationship. Does the nature of the school, the pupil attends, produce any difference in this regard?

It should be recalled here that boys in Low SES schools showed an equal level of n Achievement with those in High SES schools (Table 3.9). The boys in latter schools showed a much higher level of verbal intelligence than those in the Low SES schools (chi square 54.25; df=7; $P < .001$) school marks were available for 893 Ss from 32 schools. Eighty two boys (out of the total number of 975 were included in the Survey), perhaps many did not take the annual examination. Out of 893 boys, 179 i.e., 20% come from High SES schools, 533 i.e. 59.7% from Middle and 181 i.e., 20.3% came from Low SES schools. As mentioned above the marks from different schools were pooled together in one distribution and combined medians and other necessary measure were found out. About 27.4% of the boys in High SES schools showed scores above the combined (total marks) median. About the same proportion i.e., 27.6% of the Low SES school boys were placed above the median total marks. There was therefore, no difference in total school performance of IX class boys studying in Low SES schools and those in High SES schools.

It should be recalled that all Low SES schools had Low AS and all High SES schools had High AS which indicated that the latter showed a definitely higher academic achievement at the 1969 Higher secondary School Examination of the Board of Secondary Education. How can this descrepancy be explained? The present IX class boys from Low SES and High SES were found comparable on the total marks median pooled down from 32 different schools. Otherwise it could have been said that marking standard differed from school to school and the 'High' performers in Low SES schools were really not comparable with 'High' performers in the High SES schools. The higher secondary schools results, the common experience and knowledge suggest that the Low SES IX class boys, although found comparable with their counter-parts in the High SES schools are not likely to show similar results at the Boards' Examinations two years later. For the present, the Low SES school IX class boys, with lower intelligence and fewer educational facilities but with equivalent n Achievement level seemed to show equal level of school performance with the High SES school boys. Did their Need for Achievement help these boys to attain this equal school performance?

Taken separately, the High SES school boys showed significant relationship neither between n Achievement and performance (chi square 0.021 df = 1; NS) nor between n Ach and intelligence (chi square 0.02; df = 1; NS) whereas the Low SES school boys showed definite relationship between their performance and n Achievement (chi square 7.64; df = 1; $P<.01$). Among these boys those with high n Ach showed higher school performance. They also showed significant relationship between n Ach and intelligence (chi square 5.33; df = 1; $P<.05$). The High SES school boys might have shown higher performance because of their intelligence which was highly significantly related to performance ($P<.0001$). They might have other motives for their performance. The Low SES school boys could have attained similar performance on school examination due to their achievement motivation, inspite of other difficulties.

The High SES school represent 'better' educational facilities and presumably provide 'better' educational environment than the Low SES schools. The former are much more expensive which are normally beyond the means of any but the top 10 percent of the people, though some of the middle class parents make sacrifices to send their children to them. There is thus a segregation in education itself - the minority of private fee charging better schools meeting the needs of the upper classes and the vast bulk of free, publicly maintained, but poor schools being utilised by the rest (Education Commission Report, 1966; p.10). This privileged educational environment might be releasing powerful motives other than Need for Achievement in High SES school boys. These other motives, e.g., Need for maintaining status or seeking social approval might be prompting them for a higher level of school performance. The Need for social approval was found to be related to the apparent difficulty value of a task in the same way as the incentive value of success is related to apparent difficulty (Atkinson and O'Connor, 1962).

Did the boys studying in 'the bulk of free, publicly maintained but poor schools (Low SES) show higher incentive value of success i.e., Achievement. Between two groups of persons, given equally strong motivational disposition to succeed (M_s or n Achievement), the Atkinsons' model 1958) predicts higher tendency to approach achievement in Ss who possess higher incentive value of that task or achievement (in this case, school performance). The Achievement Motivation Inventory (AMI), results on which are reported in greater detail in Chapter 6, promises to provide measures of achievement values (described here as AR ∠AMI/). The Low SES school boys showed much higher AI (AMI) score (i.e., Achievement, value score) than those of the High SES schools (chi square 22.05; df = 4; P∠.001) o the other hand the latter showed much higher score on UR and TR (∠AMI/ task related values), than the former (chi square 36.98; df = ; $P < .0001$). The results therefore tended to support the view that the Low SES school boys on the whole had higher incentive value of achievement in schools than those in the 'High' which in turn might have tended them for 'good' school performance. The High SES school boys also showed equally 'good' performance may be because of other reasons like higher verbal intelligence, stronger task related values (alongwith comparatively higher *n* Achievement) and Need for Social Approval. The results highlight the fact that school performance, even when measured correctly, is a function of several factors. The Need for Achievement may be positively related to school performance under some conditions and may now show significant relationship under some other conditions. This point is further discussed in Chapter 6.

The School socio-economic status seemed to show certain interesting variations in the relationship between *n* Achievement and school performance. Do the components of pupils SES show similar results?

n Achievement and School Performance by Pupil's Social Class

The fathers educational level (EL) and the occupational group (OG) were found to be related to the boys *n* Achievement. The boys of fathers with 'high' education showed higher n Achievement than those of fathers with 'Low' education who, however showed higher *n* Achievement than those of fathers with secondary education (Table 3.18). Boys of fathers doing some semi-professional work showed the highest *n* Achievement with the boys from skilled and unskilled workers group showing the next highest. Boys from both these groups showed higher n Ach than those from professional and the clerical - shopkeepers group (Table 3.10). Do the boys show similar differences in school performance as in their n Achievement?

The pupils' SES showed no difference in their n Achievement (Table 3.11) whereas it showed significant relationship with school performance. About 42.5% Ss from High SES showed performance above the combined median against 26.2% from Middle SES and 21.9% from the Low SES (chi square 27.56; df =16; $P < .05$). More boys, about 36% of fathers with High EL showed medium or high academic performance against 21% of fathers with secondary education and 30% boys of fathers with low EL (chi square 20.33; $P < .05$). The fathers EL of about 12% boys was not known. The school performance therefore showed a trend similar to that shown by n Achievement for the fathers' EL. The boys of fathers in professional group showed the highest performance where as their n Achievement level was nearly the lowest. About 38% of these boys showed medium or high performance against 31% from semi-professional 21.5% from clerical; 20% from skilled workers, 24% from semi-skilled and about 21% from unskilled occupational groups (chi square 57.09; df = 24; $P < .01$). The results therefore suggested that the social class variables, except the fathers EL, were not related to school performance in the same direction as these were related to n Achievement. The results once again highlighted the fact that although n Ach showed positive relationship with school performance there were other factors which could boost or reduce it. Due to these factors, boys with higher mean n Achievement, as in the case of Low SES Ss or boys of fathers in skilled occupational group, failed to atain sufficiently high performance where as boys of fathers in the professional group with Low average n Achievement managed to atain a higher degree of school performance.

Will the boys with high n Achievement within the same social class show higher school performance than those with Low n Achievement? Table 4.5 and 4.6 provide some interesting data in this regard. Within occupational groups, boys with high n Ach and those with low n Ach (split at the median) showed no differences in their school performance, as seen in Table 4.5, although Ss with high n Achievement tended to show higher performance. Almost all the skilled, semi-skilled and unskilled workers belong to Low EL group and most of the professional and semi-professional people to the High EL group. The data are presented in a slightly different way, by EL, in Table 4.6. Within the EL groups the upper 25% of the Ss formed the high n Achievement group, the bottom 25% of the Low and the Middle 50% formed the Middle n Achievement group. Within the Low EL group, boys with High n Achievement showed higher mean school performance than those with low n Ach ($t = 2.48$; $P < .01$). The Low EL Ss showed a markedly stepper upward performance for increasing n Achievement as seen in Figure 4.1 as compared with the Ss in High and Middle EL groups. The boys with low n Achievement in Middle and High EL groups whosed higher school performance than those in Low EL groups. It seemed therefore that boys with high n Achievement in the Low EL groups showed same school performance as other boys with high n Achievement in Middle and High EL groups. This was not so with the boys with low n Ach. The boys with low n Ach in Middle and High EL groups not only showed the same performance as other boys with High n Ach in their own or other groups, but showed higher performance with those with low n Achievement in Low EL group. The results showed that such boys of fathers with low education, which may mean poorer educational environment at home, who possessed high Need for achievement could attain the same level of school performance as boys in higher EL groups. Their peers with low n Achievement, however, could not achieve the same level of performance as other boys also with low n Achievement, but in higher EL groups.

TABLE 4.6

MEDIAN PERFORMANCE BY FATHERS OCCUPATION AND n ACH GROUPS

	Median on Performance			Chi Square	P
	Low n Ach	High n Ach	df		
Professionally (N 42)	35.5 (N 22)	40.0 (20)	1	0.366	NS*
Semi-Professional (n 2)	29.0 (14)	30.0 (13)	1	0.034	NS
Clerical (N 118)	35.1 (58)	37.4 (58)	1	0.827	NS
Skilled Workers (N 46)	33.0 (21)	35.0 (25)	1	0.964	NS
Semi-Skilled (N 23)	34.5 (12)	35.0 (11)	1	0.031	NS
Unskilled (N 8)	32.0 (4)	34.0 (4)	1	0.141	NS

NS - Not significant

TABLE 4.6

MEAN ACADEMIC PERFORMANCE BY n Ach AND FATHERS EDUCATIONAL LEVEL

EL	n Ach		
	LOW	MIDDLE	HIGH
A. LOW	30.48 *(24)	31.90 (44)	36.80 (28)
B. MIDDLE	36.44 (18)	31.48 (37)	34.61 (13)
C. HIGH	34.07 (15)	33.16 (41)	36.16 (20)

	t	P
AL : AM	0.92	NS
AL : AH	2.48	.01
AM : AH	2.27	.01
AL : BL	1.84	.05
AL : CL	1.41	.10
AH : BH	0.64	NS
AH : CH	0.52	NS

* Figures in parentheses show N in each case.

A Brief Interpretation

What can be the possible reason for the boys with High n Achievement in High EL and Middle EL groups for not been able to show higher level of perfomance at the school examination, than those with Low n Achievement? Which factors help the boys with high n Achievement in the Low EL group to attain higher level of perfomance than those with low n Achievement? The educational environment at home and at school is one important factor in school achievement. The boys of fathers with Middle and more certainly, those of fathers with High EL can be assumed to enjoy better educational environment at home than the boys of fathers with Low EL. This factor, therefore, should have helped the boys with high n Achievement in the High EL group to attain higher level of school performance than those with High n Achievement in the Low EL group. In fact, the latter, (i.e. High n Ach boys in Low EL group) seemed to show equal if not somewhat greater performance at the school examination than those with High n Ach in High EL group.

The Achievement related situation(such as the school annual examination) arouses the achievement related motives - n Achiefementor motive to approach success (M_s) and anxiety or motive to avoid failure (M_{AF}). These are aroused at the same time, but in varying proportions depending upon the motivational disposition of the individual. It is hypothesised that persons High on n Ach and Low on Anxiety (Atkinson and Litwin, 1960) the boys with High n Ach in the Low EL group would show anxiety Lower than others in High and Middle EL groups. This question is further examined in Chapter 6, where results obtained on the Achievement Motivation Inventory (AMI) are reported.

The High SES and Low SES school boys also showed significantly different trends in relationship of their n Achievement with performance at school examination. Within similar occupational groups n Achievement showed no different in school achievement. Within the same SES, the schools showed erratic results, some showing positive relationship and some low negative and many showing no relationship. What factors produce such erratic results as well as certain other definite differences in trends of relationship. Besides anxiety or motive to avoid failure (M_{AF}), are there any other motives and/or factors likely to boost or dampen the effect of individual differences in n Achievement on school performance. Some such questions are discussed in Chapter 6.

CHAPTER 5

NEED FOR ACHIEVEMENT AND PUPIL SCHEMA OF ACHIEVEMENT DEMANDS

Several studies, for example, by Coleman (1960), Drews and Teapan (1963), Fraser (1959), McClelland (1963), Ryan (1958), Tannenbaum (1962) have pointed out that the demands put on the individual by his social environment contribute to the development of his desire to succeed. The parents of high academic achievers were found (Drews and Teapan, 1963) to be less permissive in their treatment of their children than the parents of low achievers. The boys are likely to be moved to action by these demands to the extent they perceive them. More meaningful to individuals is how they construct the outside achievement demands on them. As mentioned in Chapter 1, it was assumed that the boys with high *n* Achievement perceive their peers, teachers and fathers having high expectations for success at school examinations, cocurricular activities and at the choosen vocations later in life. It was further assumed that the boys perceiving others as having high expectation of their success at school attain greater success at school examinations.

The Survey of Achievement Motive in High School Boys was conducted on about 1,000 IX class boys in 32 Delhi Higher Secondary Schools. These boys were arranged alphabetically school-wise. Every fifth boy was then selected from each school list to form a representatige sub-sample for the proposed study of pupil scheme. Out of 200 boys thus selected, 193 were interviewed individually by a trained interviewer. Forty three Ss, i.e., 22.28% came each from High SES and Low SES schools, and 107 i.e., 55.44% from Middle SES schools.

Nature of Interview Variables and Scores

An interview schedule, as reported in Chapter 2, was developed and used for the study of pupil schema. The schedule contains 14 items, twelve of which related to pupil's perception of others expectation from him. These items are spelled out, with their codes, in Table 5.1. Each of the twelve items contain two questions, an open-ended and a ladder type. The coding of open-ended responses range from 0 to 10. The ladder like instrument also contains steps corresponding to these codes o to 10. Thus each subject got two scores on each of the twelve items. These responses were added to yield an average score on each item. These average scores were used for analyses reported below:

Distribution of Responses

Table 5.2 summarises basic data on distribution of scores on each interview item. Most of the items showed negative skewness with medians and modes approaching the highest point on the scale. Figures 5.1, 5.2 and 5.3 point out an identical pattern of responses to all items. The responses were always massed on the 'high' side of the distribution, suggesting an over all tendency for perceiving 'high' expected success (irrespective of the field of activity and the source of expectation). The pupil schema variables were moderately inter-correlated as seen in Table 5.3. All the correlations were positive and highly significant ($P < .01$). The arrangement and the wording of the interview items was

TABLE 5.1

PUPIL PERCEPTION OF PEERS', TEACHERS' AND FATHERS' EXPECTATION OF HIS SUCCESS: VARIABLES

Interview Item No.	Items	Code
1.	Perceptions of peers' expectation for success in co-curricular activities.	PPESC
2.	Perception of peers' expectation for vocational success.	PPEVS
3.	Perception of teachers' expectation for success in co-curricular activities	PTESC
4.	Perception of fathers' expectation for vocational success	PFEVS
5.	Perception of teachers' expectation for school success	PTESS
6.	Perception of fathers' expectation for co-curricular activities.	PFESC
7.	Perception of peers' expectation for school success	PPESS
8.	Perception of teachers' expectation for vocational success	PTEVS
9.	Perception of fathers' expectation for school success	PFESS
10.	Self expectation of success in co-curricular activities	SESC
11.	Self expectation of vocational success	SEVS
12.	Self expectation of school success	SESS

TABLE 5.2

PUPIL SCHEMA MEAN SCORES

Pupil Schema Variables	Mean	Mdn.	S.D.	Skew	Kts.
PPESC	8.614	9.500	1.255	-1.391	1.068
PPEVS	8.013	8.500	1.436	-0.944	0.743
PTESC	8.516	9.000	1.396	-1.830	3.917
PFEVS	7.995	8.000	1.474	-1.289	3.618
PTESS	7.997	8.500	1.481	-0.824	-0.168
PFESC	8.448	9.000	1.242	-1.031	0.134
PPESS	7.969	8.500	1.448	-0.684	-0.701
PTEVS	7.907	7.500	1.309	-0.389	-0.439
PFESS	8.202	8.500	1.348	-0.986	0.365
SECS	8.565	9.000	1.264	-1.383	0.956
SEVS	8.101	8.500	1.309	-0.707	-0.095
SESS	8.104	9.000	1.488	-0.794	-0.565

attempted to avoid an artificial response set. The intercorrelations suggested, as was expected, some kind of generality in pupil schema organisation.

The study sought to seek answers about the relationship of n Achievement and certain specific pupil schema variables relating to perception of success at school and later in vocational life, expected by them by their peers, teachers and fathers. It was hypothesised that Ss with high n Achievement perceive high expected success.

TABLE 5.3

INTER-CORRELATIONS MATRIX: PUPILS' PERCEPTIONS OF OTHERS EXPECTATIONS OF THEM AND THEIR OWN EXPECTATIONS

N = 193

Pupil Schema Variables	No.	1	2	3	4	5	6	7	8	9	10	11	12
PPESC	1												
PPEVS	2	215											
PTESC	3	881	436										
PFEVS	4	264	655	413									
PTESS	5	237	355	410	344								
PFESC	6	334	342	523	448	362							
PPESS	7	110[a]	316	288	309	665	313						
PTEVS	8	242	447	363	490	301	391	344					
PFESS	9	158	359	344	386	538	411	673	371				
SESC	10	327	235	470	313	298	547	282	258	382			
SEVS	11	154	403	286	365	276	315	368	472	277	282		
SESS	12	171	296	347	810	534	342	698	374	788	296	402	

[a] except this correlation, all significant at or beyond .05 level.

Results

School, Social Class and Pupil Perception

Table 5.4 and 5.5 shows chi square values between the various pupil schema and several school and socio-economic variables. The school SES, AS and Location, the pupils' SES, their fathers' EL and OG showed no significant relationship with their perception of success expected of them.

TABLE 5.4

PUPIL SCHEMA AND PUPILS SOCIAL CLASS

Pupil Schema	Fathers EL		Fathers OG		S E S	
	x^2	df	x^2	df	x^2	df
School Success						
PPESS	52.146	77	29.910	66	16.384	33
PTESS	39.132	84	27.622	72	15.912	36
PFESS	51.132	84	32.467	72	27.038	36
SESS	38.515	77	24.987	66	15.027	33
Vocational Success						
PPEVS	30.332	77	22.037	66	17.812	33
PTEVS	45.783	77	38.152	66	21.884	33
PFEVS	38.098	84	33.422	72	09.645	36
SEVS	40.244	77	46.430	66	23.453	33
Success in Cocurricular Activities						
PPESC	31.036	70	23.327	60	11.768	30
PTESC	47.641	91	39.753	78	19.625	39
PFESC	40.070	70	25.623	60	13.784	30
SESC	39.764	70	26.676	60	26.262	30

* None reaches acceptable levels of significance.

TABLE 5.5

PUPIL SCHEMA AND SCHOOLS SOCIAL CLASS

Pupil Schema	Schools AS		Schools Location		Schools SES	
	x^2	df	x^2	df	x^2	df
School Success						
PPESS	5.047	11	10.260	11	8.636	22
PTESS	7.509	12	4.051	12	9.933	24
PFESS	2.631	12	7.612	12	10.029	24
SESS	3.381	11	4.908	11	9.587	22
Vocational Success						
PPEVS	7.934	11	4.172	11	9.791	22
PTEVS	7.659	11	2.695	11	11.492	22
PFEVS	9.871	12	2.392	12	16.080	24
SEVS	3.831	11	2.945	11	16.384	22
Success in Cocurricular Activities						
PPESC	5.800	10	2.462	10	8.591	20
PTESC	6.467	13	10.551	13	11.552	26
PFESC	0.989	10	1.165	10	2.847	20
SESC	7.636	10	2.931	10	9.180	20

* None reaches acceptable level of significance.

It may be recalled here that n Achievement levels, as reported in Chapter 3, showed significant relationship with components of social class, namely the fathers EL and the occupational group (OG). Hypothetically, the pupil perceptions of expected success (PPES) should have shown somewhat similar relationship with social class variables. The absence of any definite relationship between PPES and social class therefore suggested absence of significant relationship between PPES and n Achievement. This indication was confirmed by the results recorded in Table 5.6.

Pupil Perception and *n* Achievement

The major assumptions tested in the study were that Ss with high *n* Achievement perceive higher expectations of success (higher demands on themselves) at school examinations, co-curricular competitions and later in vocational life from peers, teachers and fathers. None of these assumptions could be confirmed by the results recorded in Table 5.6. The PPES showed no relationship with *n* Achievement.

TABLE 5.6

PUPIL SCHEMA AND *n* ACHIEVEMENT

Pupil Perception of Expected Success (PPES)	df	χ^2[a]
PPESC*	4	1.0
PPEVS	9	1.3
PTESC	4	3.9
PFEVS	9	8.3
PFESC	4	0.9
PPESS	9	1.0
PTEVS	9	5.0
PFESS	9	2.0
SESC	4	1.5
SEVS	9	7.3
SESS	9	2.1

* For explanation of these terms; see Table 5.1

a. All values NS.

The uniform pattern in distribution of responses to PPES items, as seen in Table 5.2 and Figures 5.1, 5.2 and 5.3; high positive inter-correlations among them recorded in Table 5.3 and their relationships with n Ach suggested an unitary tendency in perception of expected success irrespective of the source of expectation and/or the field of activity. The scores on PESS, PTESS and PFESS were averaged to obtain a composite socre on pupil perception of expected school success (PESS). Similarly the rest of the scores were averaged to obtain composite scores on PESC and PEVS. All the nine scores were averaged to yield one composite score on perception of success in general (PEGS). Results recorded in Table 5.7 show no significant relationship of n Achievement with composite tendencies either. The relationship of n Achievement with the perception of expected success in general (PEGS) seemed to approach some significance (chi square = 2.54; df = 1; $P < .15$). The post hoc assumptions that Ss with high n Achievement perceive higher demands for success at school and projected vocations failed to be confirmed. Ss with high n Achievement however seemed to perceive somewhat higher demand for success as such, although it needed further confirmation.

n Achievement and Perception of Fathers Expectations

Although none of the assumptions regarding the relationship between n Achievement and pupil schema could be retained, the correlations recorded in Table 5.8 reveal interesting information. Ten of the twelve pupil schema variables showed negative correlations

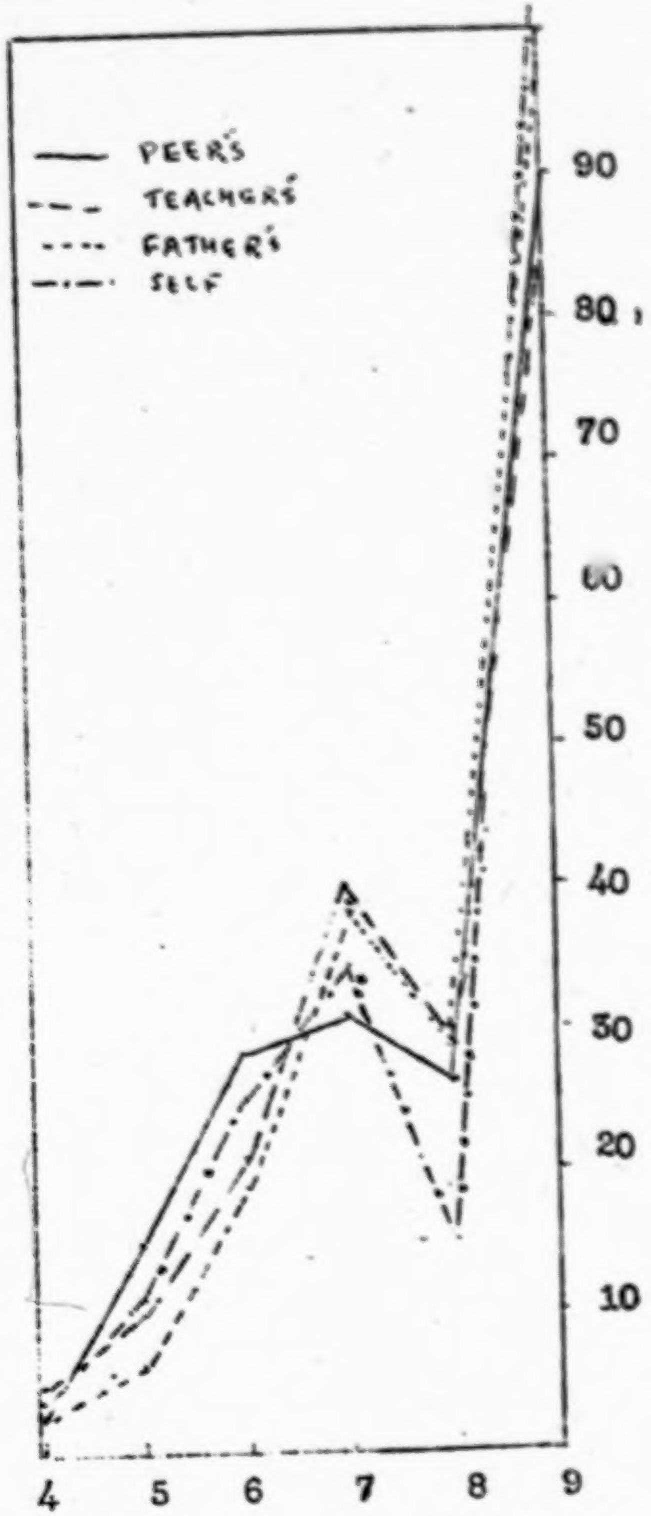


Fig. 5.1 Perception of Expected School Success

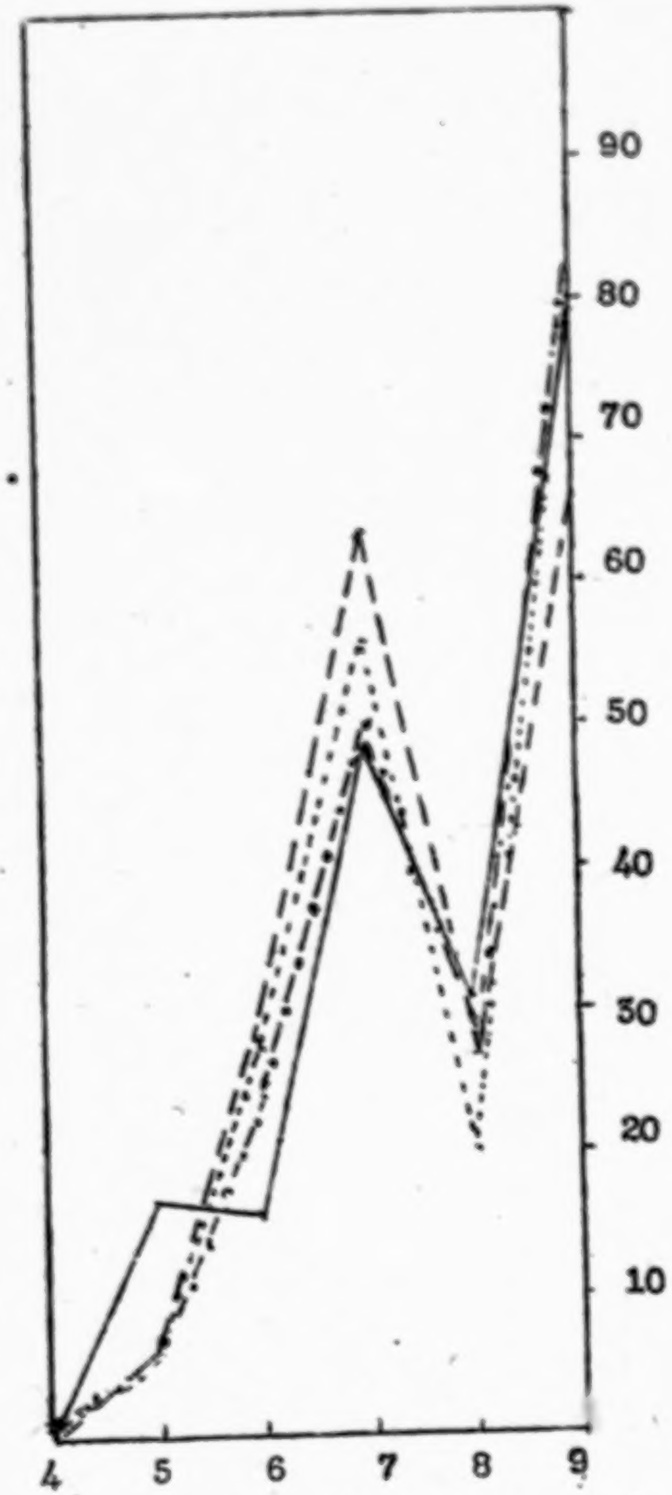


Fig. 5.2 Perception of Expected Vocational Success

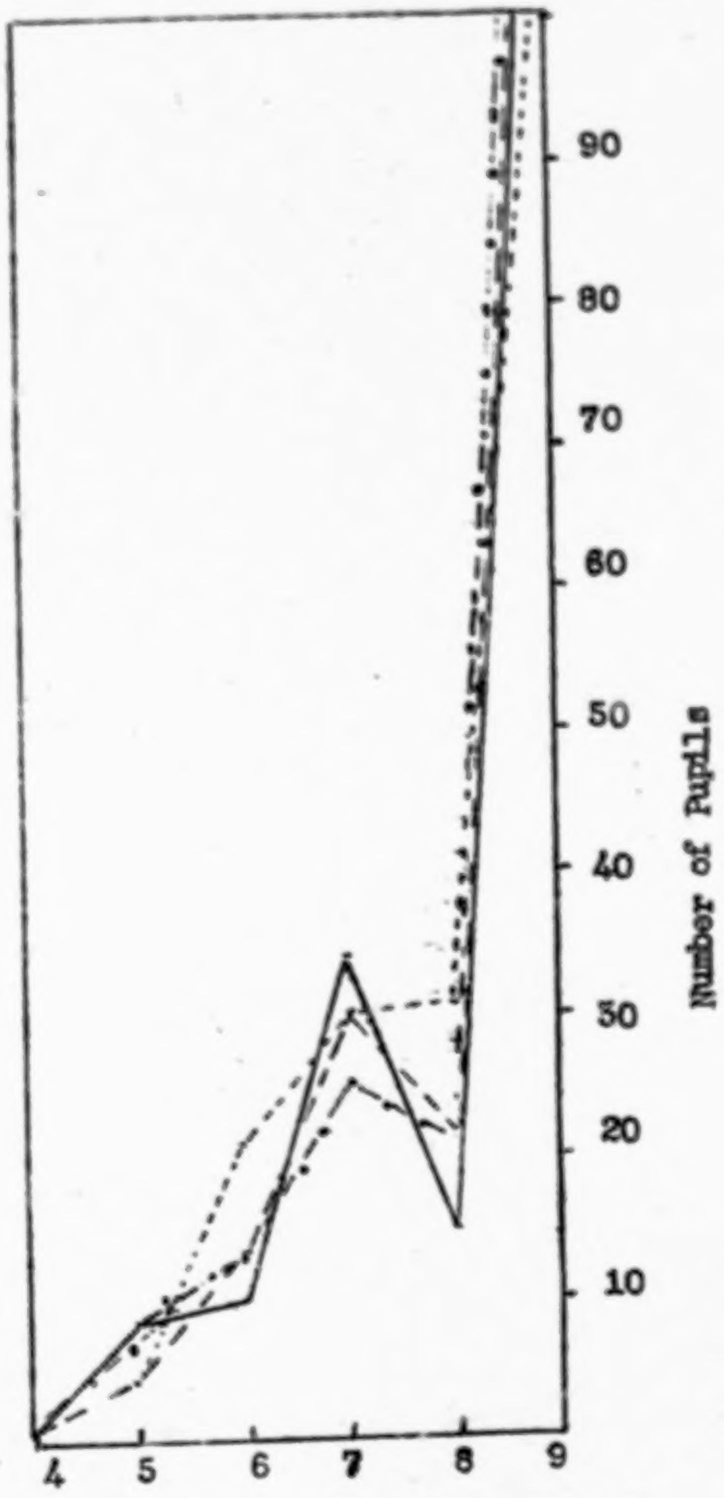


Fig. 5.3 Perception of Expected Success in Co-Curricular Activities

TABLE 5.7

n ACHIEVEMENT AND PERCEPTION OF EXPECTED SUCCESS AT SCHOOL AND VOCATIONS

Pupil Schema		df	x^2
1.	PESC	1	0.31
2.	PEVS	1	1.17
3.	PESS	1	0.024
4.	PEGS	1	2.54*

* Significant at .15

TABLE 5.8

CORRELATIONS (PRODUCT-MOMENT)OF n ACHIEVEMENT WITH PUPIL SCHEMA VARIABLES

N= 193

Pupil Schema	n Achievement
PPESC	-.028
PPEVS	-.004
PTESC	.010
PFEVS	-.185**
PTESS	-.019
PFESC	-.122*
PPESS	-.055
PTEVS	-.086
PFESS	-.004
SESC	-.007
SEVS	-.078
SESS	-.043

*Significant at .01 level, two tailed test

**Significant at .01 level, two tailed test.

with n Ach of which two were significant. The results seemed to suggest an inverse relationship between the pupils perception of fathers, expected success and n Achievement. This was significantly revealed in case of the perception of fathers expectation of vocational success (PFEVS) and fathers expectation of success at cocurricular competitions (PFESC). The fathers' expectations (as perceived by pupils) appeared to have some special meaning for development of achievement motivation in their children. Do children of Fathers perceived as high demanding show lower n Achievement levels ? A partial answer was available from the results recorded in Table 5.9.

TABLE 5.9

MEAN n ACHIEVEMENT SCORES OF Ss WITH HIGH MODERATE AND LOW PERCEPTION OF FATHERS EXPECTATIONS

Pupil Schema	(1) LOW*		(2) MODERATE		(3) HIGH	
	Mean n Ach	N				
PFESS	7.16	48	6.73	90	7.75	56
PFESC	8.11	56	6.26	56	6.72	82
PFEVS	9.11	53	5.95	82	6.6	58

		t	P**
PFESC	1 and 2	1.54	NS
	1 and 3	1.39	NS
PFEVS	1 and 3	2.39	.02
	1 and 2	3.00	.02

* Low, Moderate and High groups correspond to the Lower, Middle and Upper qualities respectively.

** All two tailed tests.

The perceptions were grouped into Low, Moderate and High categories corresponding to lower, middle and the upper quartiles of distribution of responses in each case. Ss perceiving low fathers' expectation for vocational success showed significantly higher mean n Achievement than those perceiving high expectations ($t = 2.39$; $P \angle .02$). The n Achievement showed no difference for different levels of perception of expectation of success at cocurricular competitions.

The perception of fathers expectation is related to the perception of total home environment and more certainly to fathers attitudes toward child rearing. Several investigations (Rosen, 1959; Feld, 1960; Strotdbeck, 1958; Bradfurn, 1963) have shown that the boys of authoritarian fathers show Lower n Ach than those of non-authoritarian fathers. Were (or are) those fathers who were perceived to have 'high'expectations in the present investigation, authoritarian in their attitudes toward their children ? Or are they perceived as authoritarian by their children when in fact they are not ? Winterbottom (1958) found mothers of boys with high n Achievement to be more demanding of achievement from their boys. She also found that such mothers start early independency training in their children. The present investigation provided no information on mothers' nor on fathers' attitudes. The results did, however, tend to suggest some child rearing variables, such as fathers attitudes, associated with the boys perception of their expectation regarding boys' success in vocational life or at some co-curricular competition. The results also tend to suggest that holding high expectations or aspiration for some person is one thing, and the that person perceiving the expectations as high is another. The present data failed to confirm the hypotheses that boys with high n Achievement perceive others to have high expectations from them. Some studies have pointed out the association of high n Achievement with moderate aspirations (Atkinson, 1964) and with moderate risk taking (McClelland, 1958). Would Ss with high n Achievement tend to perceive others to have moderate expectations from them ? The chi square values recorded in Table 5.6 suggested that the two, i.e., the n Achievement and the perceived expectations were not related. They seemed to be related inversely, as in the case of fathers expectations, as seen in Table 5.9. Figures 5.4, 5.5 show mean n Achievement of Low, Moderate and High perception group Ss for the expected success in school work, vocation and co-curricular activities. The mean n Ach differences for the various groups, except for PFESC and PFEVS, were not significant. The curves are V-shaped, indicating Lower mean n Ach for moderate perception group expect in case of PTEVS, PTESC and for self expectations.

The self expected success at school and at some future vocation has better approximation to expected academic success and vocational aspiration. It was, therefore, interesting to find moderate aspiration Ss showing somewhat higher although not significant, mean n Achievement, as revealed by curves for self expectations in Figures 5.4, 5.5 and 5.6

Pupil Schema and Academic Performance

It was assumed that Ss with perception of high expectations of school success would show greater school performance. This assumption seemed to receive some

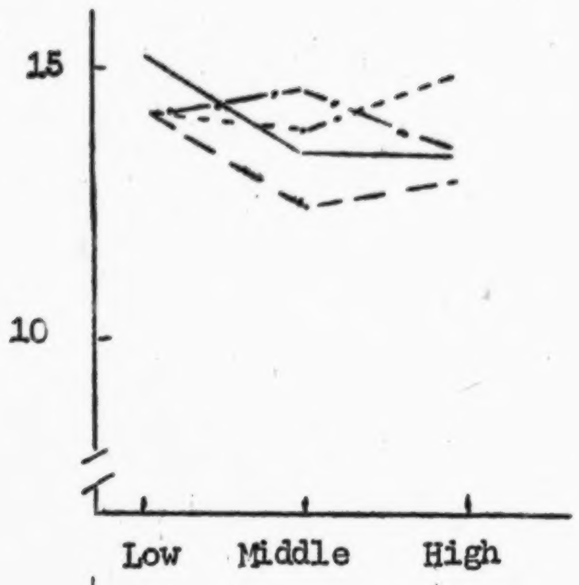


Fig. 5.4 PERCEPTION OF SCHOOL SUCCESS

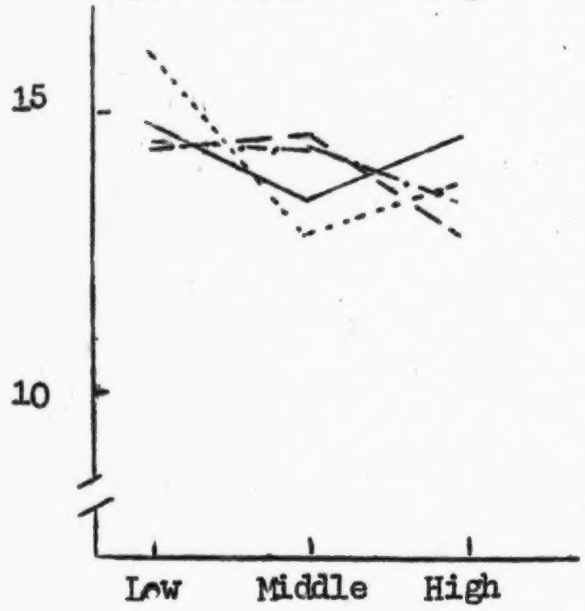


Fig. 5.5 PERCEPTION OF VOCATIONAL SUCCESS

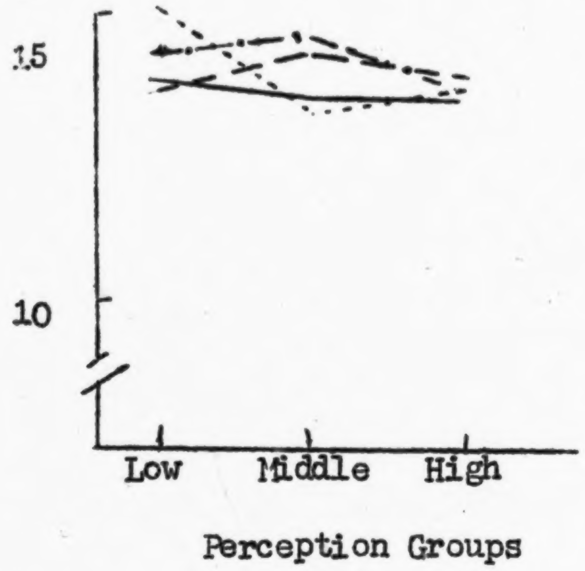


Fig. 5.6 PERCEPTION OF SUCCESS IN CO-CURRICULAR ACTIVITIES

—— Peers' —·— Teachers' - - - - Fathers' —.—. Self support by the results recorded in Table 5.10. All the four pupil schema variables relating to expected school success showed low but significantly positive relationship with total school performance (total marks).

It should be recalled here that the school marks used for analysis were obtained from the annual examinations held after the interview data on pupil schema were collected. The perceived expected school success as revealed in interview responses appeared to possess significant prediction value for school performance. Ss perceiving higher school success demands on them from peers, teachers and fathers seemed to have shown greater academic performance.

TABLE 5.10

CORRELATIONS OF PERCEIVED EXPECTED SCHOOL SUCCESS AND ACTUAL SUCCESS

Pupil Schema	r	p
PPESS	.148	.05
PTESS	.146	.05
PFESS	.221	.01
SESS	.236	.01

N = 177

Perception of Achievement Qualities

- Measure of Achievement Qualities

One of the earlier drafts of the interview schedule contained three items, one each on qualities of teachers, fathers and friends. Each respondent narrated qualities he perceived in his best friend, teacher and his father. Twenty two Ss narrated 90 qualities in peers, 71 in teachers and 70 in fathers. These were edited for over lap and repetitions and an inventory of the first ten qualities perceived in each case, was prepared. This list was inspected and used for developing an inventory of qualities. The inventory contain three sections, one each for peers, fathers and teachers. Each sections, contains five items each of which shows a pair of qualities, apparently comparable on social desirability. The Inventory therefore contains fifteen pairs of qualities, five each for peers, teachers and fathers. One in each pair is a achievement related quality (AI - following the criteria used for coding TAT stories). The respondents are required to check one quality in each pair. The scores range from 0 to 5 each for peers, teachers and fathers.

The fifteen items in the Inventory showed satisfactory discrimination in a try out carried out before it was used in the Survey. The discrimination values, found out with upper and bottom 27%, ranged between .30 to .86. The Inventory seen in Appendix VI was used in the survey alongwith the other tests.

Inter-relationship Among the Perceived Qualities

The rate of achievement qualities perceived by the Ss in their peers, teachers and fathers showed positive inter-correlations as seen in Table 5.11. The obtained correlations were significant at .0005 level.

TABLE 5.11

INTER CORRELATION MATRIX : PERCEIVED QUALITIES

N = 968

	No.	1	2	3
Peers	1	---	---	---
Teachers	2	.168	---	---
Fathers	3	.208	.142	---

* All are significant at .0005 level.

Perceived Achievement Qualities by School and Social Class

The pupils' SES and their fathers EL and occupational group showed us difference in perception of achievement related qualities. The boys perception of qualities in peers and fathers showed no difference for the school SES, AS and Location. The Low SES boys however perceived greater number of achievement qualities in their teachers than that perceived by the boys in Middle and High SES school boys (chi square 20.59; df = 84; P∠.01). Similarly, boys in Low AS schools and those in rural schools perceived greater number of achievement related qualities in teachers than that of boys in High AS and urban schools, respectively (chi square 13.29; df = 4; P ∠.01 and chi square 17.02; df = 4; P ∠.01).

Perceived Achievement Qualities and Pupil Schema of Achievement Demands

Table 5.12 shows correlation between scores on perceived achievement qualities in peer, teacher and father and pupil schema of achievent demands (expected success) from the same sources. No results were significant.

TABLE 5.12

CORRELATIONS OF PUPILS SCHEMA WITH PERCEIVED ACHIEVEMENT QUALITIES

Pupil Schema	Perceived Achievement Related Qualities in		
	Peers N-191	Teachers N - 191	Fathers N = 191
PPESS	.016	.047	.037
PTESS	-.034	.100	.044
PFESS	.012	.070	-.046
SESS	.049	.100	-.013
PPEVS	.003	-.066	.021
PTEVS	.049	-.042	.000
PFEVS	.031	.070	.036
SEVS	.035	-.019	.040
PPESC	-.032	.035	.026
PTESC	.003	-.059	.067
PFESC	.014	.061	.100
SESC	-.029	.053	.102

Perceived Achievement Related Qualities and n Achievement

It was hypothesised that boys with high n Achievement perceive achievement related qualities in their peers, teachers and fathers. Correlations, recorded in Table, 13 showed no relationship between n Ach and number of achievement related qualities perceived by the Ss in their peers and teachers. The n Achievement showed positive relationship with the rate of achievement related qualities perceived in fathers ($r = .133$; $P \angle .005$. The results, presented in Table 5.13 revealed positive correlations of the latter with several n Achievement characteristics.

TABLE 5.13

CORRELATIONS BETWEEN ACHIEVEMENT QUALITIES PERCEIVED AND n ACHIEVEMENT

	Achievement Qualities Perceived by Pupils in		
	Peers N 968	Teachers N = 969	Fathers N = 969
n Ach	.019	-.050	$.133^c$
UI	$-.087^c$	-.015	$-.096^c$
TI	.030	.0051	$-.072^a$
AI	.045	-.009	$.130^c$
N	.003	-.045	$.103^c$
I	.018	-.012	$.103^c$
Ga^+	.044	.005	$.076^b$
Ga-	.027	.016	.036
Bp	.018	-.027	$.080^b$
Bw	-.043	-.006	.031
Nup	-.028	.009	$.055^a$
G+	.035	.023	.026
G-	.042	.002	-.025
Ach Th	.019	-.016	$.114^c$

a. Significant at .05 level
b. Significant at .01 level
c. Significant at .005 level

The Rate of Perceived Qualities and School Performance

The rate of achievement qualities perceived in fathers showed positive correlation with the boys total performance at the school annual examination. The results, recorded in Table 5.14, showed no relationship between rate of qualities perceived in peers and teachers and school performance.

TABLE 5.14

CORRELATIONS OF RATE OF PERCEIVED QUALITIES WITH SCHOOL PERFORMANCE

N = 837

	Qualities Perceived in		
	Peers	Teachers	Fathers
r with Performance at Annual Exam.	-.013	-.046	.148*

$P < .0005$

Summary and Conclusions

It was hypothesised that boys with high n Achievement perceive high achievement demands (high expected success) on them by their peers, teachers and fathers. It was further hypothesised that boys with high n Achievement perceive greater number of achievement qualities in peers, teachers and fathers. Data on pupil schema of achievement demands were collected through individual interviews with the help of an interview schedule. The data on achievement qualities were collected through a group check list. All hypotheses regarding the relationship of pupil schema and n Achievement were rejected: On the contrary n Achievement was found to be negatively related to the perceptions of fathers expected vocational success. The pupil schema of fathers, teachers and peers expected school success were found to be related to actual performance at school examination. Self-expectancy of school success was also positively related to actual school performance. The social and school characteristics made no difference in pupil schema of achievement demands.

The boys studying Low SES and Low AS schools perceive greater number of achievement qualities in their teachers.

The hypotheses regarding the relationship of n Achievement and the perception of achievement qualities in the peers and teachers were also rejected. The boys with high n Achievement perceived greater number of achievement related qualities in their fathers than those Low in n Achievement thus, confirming the hypothesis. This finding assumed greater importance in view of the negative correlation between n Achievement and pupil schema of fathers expected success. The pupils perception achievement related qualities in fathers and the pupil perception of fathers achievement demands on him appear as two different things.

The results raised questions concerning the concept of pupil schema, particularly about the perception of the fathers' achievement demands. Are fathers who are perceived by sons as 'high' demanding (high expectation) really high demanding ? Do high demanding fathers produce anxiety in their children and is such anxiety aroused when children are asked to imagine and recall their fathers expectations ? Are high demanding fathers perceived as 'authoritarian' by their teenage sons ? What are the attitudes and roles of mothers in families where sons perceived their fathers as high demanding ? These are some of the important questions which need to be answered by further research.

CHAPTER 6

ACHIEVEMENT MOTIVATION INVENTORY

The Inventory was developed to provide a simple and objective measure of Achievement Motivation. As reported in Chapter 2, it contains 22 items - descriptive statements of pictorial stimuli which were tried out in connection with the development of the thematic apperceptive measure of n Ach. Each item is followed by six alternative of which the respondents are required to check one. One specimen item with alternatives is exhibited in Table 6.1. Other items can be seen in Appendix 5. Two each of the six alternative responses were achievement related, task related and unrelated to achievement; designated respectively as AI, TI and UI, for the sake of reporting. In Table 6.1, alternatives 3 and 6 are AR, 2 and 5 TR and 1 and 4 UR. They tend to form a

TABLE 6.1

SPECIMEN ITEM FROM THE ACHIEVEMENT MOTIVATION INVENTORY

2. A boy is painting.
    1. He is thinking whether to complete the painting or to leave it incomplete.
    2. He is practicing painting.
    3. He is painting in order to participate in the schools annual art competition.
    4. He is thinking whether to put colours in painting or not.
    5. That boy is learning the art of painting.
    6. He is thinking that he would paint beautiful pictures after learning to draw nicely.

continuum UI - TI - AI. The stories written to pictures were coded as either achievement related imagery (AI) or task related (TI) or unrelated(UI) , and the alternatives under each AMI item were drawn from such stories.

Four scores were assigned on the Inventory following the procedure described in Chapter 2. Anyone response can be either AR or TR or UR. The AR TR and UR were counted to assign AR TR and UR scores to each subject. Total number of UI were deducted from AR responses to form the fourth score i.e., the total AMI score.

The Inventory was administered as a pert of the survey of Achievement Motive in Delhi High School Boys. About 1,000 IX class boys from 32 different schools formed the Ss of the Survey. The number of AI responses ranged between 2 to 20 and the TI and UI responses from 0 to 14. Table 6.2 presents mean AI, TI and UI. Each subject gave 22 responses (to 22 AMI items) of which about 50% were AI with mean AI response at 11.40. The TR and UR responses together formed the remaining 50%. The distribution patterns of TI and UI appeared to be similar to each other and different from that of AI.

TABLE 6.2
MEAN, MEDIAN AND S.D. OF AMI (TOTAL),AMI - AR
AMI-TR AND AMI-UR SCORES OF A RANDOM SUB-SAMPLE
N= 180

Inventory Scores	Mean	Median	S.D.
AMI (TOTAL)	6.75	6.46	6.10
AMI-AR	11.40	11.40	4.03
AMI-TR	6.16	6.08	2.74
AMI-UR	4.61	4.28	2.44

AMI Results by Schools

Table 6.3 records mean AMI scores for schools by their SES and AS. The mean for the High AS and High SES Schools ranged between 3.83 and 6.95 with an overall mean of 5.47. The means for high AS and Middle SES schools ranged between 4.04 and 9.00 with an overall mean of 5.97 and the means for Low AS and Low SES schools ranged between 6.40 and 11.33 with an overall mean of 8.27. The Ss studying in Low SES schools with Low AS showed significantly higher AMI scores (t = 4.6; P∠.0005) than those in High SES schools with High AS as well as those from High AS and Middle SES schools as shown in Table 6.4. Boys in Low AS schools showed higher AMI score than those in High AS schools (chi square 9.05; P ∠.02).

Boys studying in Low SES schools showed higher AMI score and AR than those in High and Middle SES schools (chi square respectively 22.016 and 22.05; both P ∠.001). On the other hand the latter, i.e., the boys in High and Middle SES, showed more TR and UR than the former as seen in Table 6.5 and 6.6. The Low category represents the bottom 25% of the distribution and the High the top 25% with middle 50% forming the Middle category of TR and UR. About 45% of the High SES school boys and 40% of the Middle SES showed 'High' UR response as compared to 18.2% of the Ss from Low SES schools (ch square 36.99; df = 4; P ∠.001). The High SES school boys showed higher TR than those in Low SES schools (chi square 13.30; df = 4; P ∠.01).

TABLE 6.3

SCHOOL-WISE MEAN AND S D OF AMI SCORES BY SCHOOLS ACHIEVING STATUS AND SCHOOLS SOCIO-ECONOMIC STATUS

Schools AS and SES	Code No.	N	Mean AMI	S.D.	Mean n Ach	S.D.
High AS/High SES	07	39	6.95	5.85	8.46	5.68
	12	33	4.60	6.87	8.94	6.00
	09	30	6.00	7.14	9.67	5.47
	08	30	3.83	4.56	7.58	5.94
	10	38	4.26	6.06	6.45	4.57
	04	47	6.55	6.34	7.34	4.93
High AS/Middle SES	13	41	6.80	5.84	8.75	5.89
	15	33	3.69	5.44	7.27	3.91
	16	44	7.97	5.59	6.59	5.41
	19	50	6.50	6.18	7.40	6.50
	06	30	1.16	5.27	4.33	4.42
	27	34	7.97	5.25	9.12	6.36
	11	27	4.18	7.87	5.71	5.46
	03	38	2.94	5.63	7.24	5.70
	01	36	4.42	7.67	7.06	5.05
Low AS/Middle SES	20	35	5.42	5.55	6.43	5.29
	18	30	9.00	6.19	8.50	4.31
	02	19	5.31	9.71	9.75	7.33
	17	34	4.44	5.19	4.56	5.73
	14	34	4.04	4.30	2.65	3.88
	05	34	6.05	5.95	7.06	6.66
	21	27	6.59	6.98	4.81	5.69
	26	23	7.47	5.60	8.26	6.85
	28	05	7.00	6.78	10.00	7.07
Low AS/Low SES	32*	15	11.33	6.01	6.56	4.67
	31*	16	8.06	4.74	9.70	5.28
	29*	23	9.43	4.64	6.60	4.84
	30*	41	7.65	4.94	6.30	3.89
	25	16	8.37	4.95	6.33	4.64
	22	17	9.00	5.42	10.31	5.44
	24	25	6.40	4.27	4.13	5.24
	23	27	7.88	5.23	8.21	5.54

* Rural Schools

TABLE 6.4

AMI MEAN SCORES BY SCHOOL AS FOR SCHOOL SES

Variables	N	Mean	x	t	p
A. HAS/HSES	217	5.47	AB	0.313	NS
			AC	0.877	NS
B. HAS/MSES	333	5.30	AD	4.910	.0005
			BC	1,230	NS
C. LAS/MSES	241	5.97	BD	6.500	.0005
D. LAS/LSES	180	8.27	CD	4.600	.0005

H = High; L = Low; M= Middle

TABLE 6.5

CONTINGENCY TABLE OF SCHOOLS STATUS AND UR-AMI

	Schools Status			Total	
UR.AMI	HIGH	MIDDLE	LOW	N	%
LOW	27.8	32.9	45.9	332	34.2
MEDIUM	27.3	26.6	35.9	277	28.5
HIGH	44.9	40.5	18.2	363	37.3
N =	216	575	181	972	
% =	22.2	59.2	18.6		

Chi square 36.989; df = 4; P ∠.001

TABLE 6.6

CONTINGENCY TABLE OF SCHOOLS STATUS AND TR-AMI

	School SES			Total	
TR_AMI	High	Middle	Low	N	%
LOW	47.2	34.8	42.0	378	38.9
MEDIUM	22.7	33.4	29.3	294	30.2
HIGH	30.1	31.8	28.7	300	30.9
N =	216	575	181	972	
% =	22.2	59.2	18.6		

Chi square 13.297; df = 4; P ∠.01

AMI Results by Schools Geographical Status

Four rural schools contributed 97 Ss i.e 10 percent of the total survey sample. These boys showed considerably higher AMI score than the urban boys. Nearly 78 percent of the rural Ss showed medium or high AMI scores against 62 percent of the urban Ss (chi square 10.14; df= 2; P ∠.005). The urban Ss showed higher rate of UR. Nearly 68 percent of these Ss showed medium or high UR against 49% of the rural Ss (chi square 29.14; df = 2; P ∠.001). The urban and rural Ss showed no difference in the rate of TR.

AMI Results by Pupils Socio-Economic Status

The pupils SES showed significant relationship neither with .R or AMI total socre nor with TR. However, about 47% of the Ss with High SES showed 'High' UI responses as compared to 39% with Middle and also 39% with Low SES and only 16.8% boys from the rural group (chi square 26.18; df=6; P ∠.001). as seen in Table 6.7.

TABLE 6.7

CONTINGENCY TABLE OF S-E STATUS AND UR-AMI

	Rural	SE Status				
UR-AMI	Group	High	Average	Low	No	%
LOW	46.9	32.0	34.0	30.1	327	34.2
MEDIUM	36.3	20.8	26.8	30.1	273	28.6
HIGH	16.8	47.2	39.2	39.9	355	37.2
N =	113	53	503	286	955	
% =	11.8	5.5	52.7	29.9		

Chi square 26.179; df = 6; P ∠.001

*There were 97 rural boys for whom no fathers SES data were available. 20 urban boys, for whom also this was not available, are included in this group.

AMI Results by Fathers Educational Level and Occupation Group

No socio-economic status data were available for the rural boys. The urban boys were classified by their fathers educational level. The rural boys were retained as a group by themselves. These boys as, mentioned above, showed considerably high AMI score than the urban boys. There were 113 boys for whom information on their fathers educational level as well as occupational group was not available. Of these 97 were rural boys and the rest urban. Nearly 47 per cent of these boys, which was almost the rural group, showed low rate of UR against 34 percent, 30 percent and 30 percent boys each respectively of fathers with high EL, Middle EL and Low EL. On the other hand, 38 percent, 43 percent and 39 percent boys respectively of fathers with High, Middle and Low EL against about 17 percent rural boys showed high rate of UR (chi square 35.22; df = 14; P ∠.005). Nearly 75 percent of the Ss from the rural group showed medium or high AMI score as compared to about 60 percent boys of fathers in professional group , about 72 per cent from the semi-professional group, 63 per cent from the skilled workers group and about 67 per cent from unskilled workers group (chi square 24.07; df = 12; P ∠.025) as seen in Table 6.8.

TABLE 6.8

CONTINGENCY TABLE OF FATHERS OCCUPATION AND AMI SCORINGS

AMI Scorings	Rural Boys*	Professional	Semi-Prof.	Clerk	Skilled	Semi-skilled	Un-skilled	N	%
LOW	24.6	39.6	26.9	40.6	36.9	41.3	33.3	342	35.8
MEDIUM	38.6	26.6	37.7	34.3	34.4	33.3	45.6	332	34.8
HIGH	36.8	33.3	35.4	25.2	28.7	25.3	21.1	281	29.4

Chi square 24.069; df = 12; P ∠025
*See footnote at Table 6.7

Nearly 47 per cent of the rural boys as seen in Table 6.9 showed low rate of UR against about 29 per cent; 44 per cent; 33 per cent; 35 per cent and 23 per cent boys respectively of fathers doing professional, semi-professional, clerical, skilled, semi-skilled and unskilled work(chi square 43.80; df= 12; P=∠.001). These groups showed no difference in their rate of TR.

TABLE 6.9

CONTINGENCY TABLE OF FATHER-S OCCUPATION AND UR

UE-AMI	Rural*	Professional	Semi-Prof.	Clerk	Skilled	Semi-Skilled	Un-Skilled	N	%
LOW	47.4	29.5	43.8	30.2	32.8	34.7	22.8	327	34.2
MEDIUM	36.0	28.8	25.4	25.8	28.7	21.3	43.9	272	28.5
HIGH	16.7	41.7	30.8	44.0	38.5	44.0	33.3	356	37.3
N=	114	139	130	318	122	75	57	955	
%=	11.9	14.6	13.6	33.3	12.8	7.9	6.0		

Chi square 43.798; df = 12; P ∠.001
* See footnote of Table 6.7

AMI and Need for Achievement

As mentioned above and in Chapter 2, the AMI instrument was developed on the basis of the stories written to pictures for n Achievement. It was hoped that the results on the AMI would show acceptable if not high positive relationship with n Ach scores. Table 6.10 presents the relevent results which make an interesting study. The total AMI score and the average AI response on the AMI showed highly significant positive correlation with the n Achievement scores. (P ∠.001). The n Ach showed equally highly significant but negative correlations with the average UR and TR responses on the AMI (P ∠.001). The number of TAT type stories coded as achievement related imagery (AI) showed similarly significant positive correlation with the total AMI score and the average AI response on the AMI. (P ∠.001). The stories which were coded as task related imagery (TI).

TABLE 6.10

CORRELATION BETWEEN n ACHIEVEMENT CATEGORIES AND AMI CATEGORIES
N = 973

n Ach Categories	AMI Total	AMI Categories UR	TR	AR
n Ach Total Score	.175^{c}	-.172^{c}	-.095^{c}	.162^{c}
Unrelated Imagery (UI)	-.102^{b}	.114^{b}	.051	-.100^{b}
Task Related Imagery (TI)	-.094^{b}	.090^{b}	.072^{a}	-.086^{b}
Achievement Related Imagery (AI)	.152^{c}	-.172^{c}	-.092^{c}	.138^{c}

a. Significant at .05 level
b. Significant at .01 level
c. Significant at .001 level

or as unrelated imagery (UI) showed significant negative correlations with AMI score and the average AI response on AMI (P ∠.01). In turn these stories showed significantly positive relationship with the average UR and TR on the AMI. Except in one case where the UI stories did not show significant relationship with the TR on the AMI. It was, therefore, evident that AMI score and the AI response on the AMI were related to n Ach differently from the UR and TR on the AMI. It seemed that the AMI was measuring two different behavioural characteristics which were inversely related to each other (Table 6.11). The significant negative relationship between n Ach and the non AR on the AMI raised important questions. Did the UR or TR on the AMI indicate some kind of avoidance motive similar to anxiety ?

TABLE 6.11

CORRELATION BETWEEN n ACHIEVEMENT SUBCATEGORIES AND AMI CATEGORIES

N = 973

n Ach Characteristics	AMI Total	AMI Categories UR	TR	AR
N	.150^c	-.164^c	-.096^b	.151^c
I	.147^c	-.162^c	-.102^b	.134^c
Ga+	.091^c	-.061^a	-.051	.062^a
Ga-	.018	-.030	-.014	.040
Bp	.027	-.020	.025	.000
Bw	.057^a	-.053^a	-.040	.067^a
Nup	.004	-.017	-.006	.006
G+	.113^c	-.095^c	-.106^c	.138^c
G-	.002	-.015	-.010	.019
Ach Th	.150^c	-.147^c	-.080^b	.146^c

a. Significant at .05 level
b. Significant at .01 level
c. Significant at .001 level

AMI Responses and n Achievement Characteristics

Results in Table 6.11 show negative correlations between the UR and TR on the AMI and the n Ach sub-categories, where as the AMI score showed positive correlations with the sub-categories some of which were highly significant notably with Need (N) (P ∠.01) and positive affect (G+) (P ∠.01). These results tended to further support the view that the AMI instrument was discharging two following functions: (i) showing up some behaviour similar to or positively related to n Ach; and (ii) providing information on another segment of behaviour which was significantly opposite of n Achievement.

AMI Responses and Pupil Schema

Table 6.12 presents data on the relationship between AMI responses and pupils' perception of expected success. Interestingly, the AMI score and the AR on the AMI showed most of the corelations as positive whereas the UR and TR on the AMI showed most of them as negative. One, i.e., between UR and the self expected vocational success was significantly higher than the chance level (r = -..217; P ∠.01). Whereas, the AMI total score and the AR showed positive relationship with self expected vocational success (SEVS) respectively, r = .231; P ∠.01 and r = .121; P ∠.05). The AMI score showed significant positive relationship with pupils' perception of teachers expected vocational success (r = .124; P ∠.01). No other correlations were found to be significant. Not withstanding significance, trends in relationship as seen in Table 6.12 were noteworthy.

AMI and School Performance

The AMI score showed positive relationship with total school marks (r = .109; P ∠.01) as well as with marks in English (r =.114; P ∠.01) and Mathematics (r = .067; P ∠.05). The results, presented in Table 6.13 indicated interesting relationship trends. The AR on the AMI showed positive relationship (r = .089; P ∠.01) whereas the UR and TR showed negative relationship (r = -.078 and -.084; both P ∠.01) with total school performance. The AMI scores and the AR showed positive

TABLE 6.12

CORRELATION BETWEEN PUPIL SCHEMA AND AMI VARIABLES
N = 193

1.	PPESC	.080	-.008	-.027	.047
2.	PPEVS	.072	-.012	-.066	.093
3.	PTESC	-.002	.038	.034	-.004
4.	PFEVS	.075	-.044	-.036	.088
5.	PTESS	.036	-.018	-.004	-.034
7.	PFESC	-.052	.014	.066	-.062
8.	PPESC	.060	-.046	-.037	.000
9.	PTEVS	.124[a]	-.074	-.083	.094
10.	PFESS	.096	-.024	-.115	.094
11.	SESC	.048	-.016	-.025	.039
12.	SEVS	.231	-.217[b]	-.006	.121[a]
13.	SESS	.055	-.013	-.023	.044

a. Significant at .05 level
b. Significant at .01 level

TABLE 6.13

CORRELATIONS OF AMI AND ITS SUB CATEGORIES WITH SCHOOL PERFORMANCE IN VARIOUS SUBJECTS

AMI Scores	Total School Marks N=893	Marks In					
		English N=894	Hindi N=552	Maths. N=644	Sc.Subjects N=342	Non Sc. subj. N=561	Intelligence N=972
AMI-Total Score	.109[c]	.114[c]	-.003	.067[b]	.093	.055	.068[b]
AMI-UR	-.078[b]	-.114[c]	.032	-.076[b]	-.036	-.019	-.039
AMI-TR	-.084[c]	-.048	-.003	-.037	-.162[c]	-.019	-.057
AMI-AR	.089[c]	.098[c]	.003	.041	.103[a]	.060	.087[b]

a. Significant at .05 level
b. Significant at .01 level
c. Significant at .005 level

trends in relationship with performance in various school subjects whereas UR and TR showed negative trends. The AMI responses showed similar trends in their relationship with verbal intelligence i.e., AR showing positive (P ∠.01) and TR and UR showing negative correlations . (NS)

AMI and School Performance by Schools

The boys studying in schools designated as Low achieving (Low AS) showed significantly higher AMI socre (chi square 9.05; df = 2; P ∠.02) and lower rate of UR (chi square 15.67; P ∠.001) than those studying in High AS schools. The school-wise analyses, recorded in Table 6.14 revealed erratic relationship between AMI scores and total school performance. Four of the five High SES schools with High AS showed significant positive relationship (r ≥ .35; P ∠.05). Four out of nine Middle SES schools with High AS showed significant relationship, three positive (P ∠.05) and the fourth negative (r= -.40; P ∠.01). One out of seven Middle SES schools with Low AS showed positive relationship (r = .52; P ∠.01). None of the four Low SES schools with Low As showed significant results. The AMI total scores showed similarly erratic results with scores on group test of verbal intelligence. Six out of 24 schools showed negative results with one significant (r = -.33; P∠.05). Two schools showed positive relationship (r = .30 and .34 both P ∠.05).

Theoretical Validation of Achievement Motivation Inventory

Mandler and Sarason (1952) and Sarason *et al* (1958) have studied the behavioural correlates of test anxiety. Generally they support the view that high test anxiety scores are associated with poor task performance. They propose that the parents of a child who is high in

TABLE 6.14

SCHOOL-WISE CORRELATIONS BETWEEN AMI, SCHOOL PERFORMANCE AND INTELLIGENCE

	School No.	AMI/School Performance	AMI/Intelligence
High AS/ High SES	07	-.06	.18
	12	-.22	.04
	09	.36^a	.30^a
	10	-.04	-.24
	04	-.12	.06
High AS/ Middle SES	13	.32^a	-.06
	15	-.40^b	.03
	16	.11	.02
	19	.07	-.04
	06	.12	-.033^a
	11	.39^a	.13
	27	.39^a	.13
	03	.10	.25
	01	.11	-.04
Low AS/ Middle SES	20	.03	.02$_1$
	18	.03	.09
	17	.18	-.06
	14	-.08	.02
	05	.34	.16
	21	.18	-.13
	26	.52^b	.16
Low AS/ Low SES	29	.05	.34^a
	30	.22	.11
	24	.03	.03
	23	.25	.01
		.109^d	.067^c

a. Significant at .05 level
b. Significant at .01 level
c. Significant at .025 level
d. Significant at .005 level

test anxiety evaluate the children's behaviour frequently and in such a way that the child perceives evaluation and reacts with hostility towards parents. The expression of this hostility is punished which produces guilt and fear of withdrawl of love. The child attempts to win approval from the parents or too much support and love by parents by conforming to their wish. Atkinson and Litwin (1959) have presented a different conception of test anxeity. They suggest the test anxiety score to be viewed as a manifestation of the motive to avoid failure. The obtained relationship between n Ach and test anxiety have been generally negative but not significant under neutral conditions (Atkinson and Litwin, 1960; Litwin, 1958). In many studies achievement values measured in a variety of ways have been unrelated to n Ach score. (Atkinson and Litwin, 1958; Birney 1958; d'Charms et al, 1955; Marlow, 1958; McClelland, 1958; Strodtbeck, 1958). Most of the available evidence on the inter-relationship among these measures i.e., measures of n Ach, achievement values and test anxiety point out to the relative independence of these three achievement related variables.

The results of the present investigation obviously stand apart from these of the studies mentioned above. The non-achievement related responses on the AMI designated as task related (TR) or unrelated to achievement (UR) showed very significant negative relationship with n Achievement. Those Ss who were high on n Achievement were found to be low on UR - TR on the AMI. These negative results were more similar to Raphelson (1957) who obtained negative correlation of .43 (N = 25) between n Ach and test anxiety. The n Achievement was positively related to school performance whereas TR and UR on the AMI showed negative relationship with performance on the annual school examination. This led to the assumption that n Achievement was providing a measure of motive to approach success (Ms) and the TR and UR on the AMI indicating the motive to avoid failure (MAF) or test anxiety).

Following Atkinson and Litwin (1960), the theory of achievement motivation predicts positive relationship of n Achievement and negative relationship of test anxiety with performance. The present results provided support to this view. The theory further predicts that Ss who are simultaneously classified as High on n Ach (above the median)would show greatest differences with the Ss classified as Low on n Ach and High on test anxiety on competitive tasks of intermediate difficulty. The school annual examination used in the present investigation was certainly a competitive situation at which boys with high n Achievement performed higher than those who were high on TR-UR responses on the AMI. The same examination might have been perceived as differently by different pupils. No direct data on the subjective probability of success at this particular examination were available. However, the Ss were interviewed, some two months before the annual examination for their perceptions of expected success. This was assumed to indicate individuals subjective probability of success at the school examination.

The theory assumes that all individuals have both, a motive to achieve success (n Ach or M_S) and a motive to avoid failure (test anxiety or M_{AF}). These motives are inevitably aroused in a person during the time of performance creating an approach - avoidance conflict. But individuals High on M_S and Low on M_{AF} are tended to show greater performance than the opposite group i.e., those Low on n Ach and High on anxiety. In order to test this theory in the present investigation, it was predicted that :(i) Ss High on n Ach (above the median) and Low on UR+TR responses on AMI (below the combined median) would show greater school performance (total marks) than three other possible groups namely; (ii) those Low on n Ach and High on TR+UR (AMI); (iii) those High on both the tests and (iv) those Low on both. It was further predicted that the above groups would show differences in their expectancy of school success with a greater proportion of Ss in group (i) above, showing moderate expectation.

The results presented in Table 6.15 confirm the above mentioned prediction about the performance at the school examination. The boys, High on n Achievement and Low on TR+UR (AMI) showed significantly higher performance ($t = 3.33$; $P \angle .005$) than those Low on n Achievement and High on TR+UR (AMI). The former group of boys (i.e. those High on n Achievement and Low on TR+UR on AMI) showed greater school performance than those Low on both the tests (t = 2.37; P∠.01).

The prediction regarding the expectancy of school success however could not be confirmed. A greater proportion of those boys who were Low on n Achievement and High on UR (AMI), about 54% showed moderate SES as compared to 34.3% of those High on n Ach and Low on UR(AMI), as seen in Table 6.16 showed slightly lower mean SESS than those Low on n Ach and High on UR(AMI) (t = NS). The pupil schema variables as reported in Chapter 5 on the whole, showed erratic and Lower relationship with n Achievement. The SESS, however, showed significant positive correlation (Table 5.10) with total school performance.

TABLE 6.15

MEAN PERFORMANCE AT SCHOOL EXAMINATION FOR Ss CLASSIFIED ON n ACHIEVEMENT AND TR + UR (AMI)

No.	Tests		N	Mean performance at Exam.	Difference	t	P
	n Ach	TR+UR (AMI)					
1.	High	Low	45	45.8	1 and 4	3.33	∠.005
2.	High	High	29	42.9	1 and 2	1.13	NS
3.	Low	Low	43	39.7	1 and 3	3.37	∠.01
4.	Low	High	41	37.4	2 and 3	1.15	NS

TABLE 6.16

EFFECT OF INDIVIDUAL DIFFERENCES IN TWO MOTIVES (n Ach AND ANXIETY) TESTED SEPARATELY ON EXPECTANCY OF SCHOOL SUCCESS

No.	n Ach	UR (AMI)	N	Mean	Mean Differences Between	t	P
1.	High	Low	61	7.87	1 and 4	0.48	NS
2.	High	High	38	6.84	1 and 2	2.31	.025
3.	Low	Low	41	7.27	1 and 3	1.37	NS
4.	Low	High	54	8.05	4 and 3	1.85	.05

Those Ss who were High on n Achievement and Low on UR (AMI) showed the highest performance at school examination (Table 6.15).From amongst these Ss those who indicated Moderate expectancy of school success showed greater performance at school examination than those who indicated High or Low expectancy, more definitely with the latter (z = 2.53; P∠0062), as seen in Table 6.17. Within the group of those who indicated Moderate expectancy, Ss who were High on n Ach and Low on UR (AMI) showed greater performance at the examination than other (z = 2.9; P∠.0019). The results in Table 6.17 provided further evidence in support of the theory of achievement motivation mentioned above (Atkinson and Litwin, 1960).

TABLE 6.17

EFFECT OF INDIVIDUAL DIFFERENCES IN TWO MOTIVES (n Ach AND ANXIETY) TESTED SEPARATELY AND EXPECTANCY OF SUCCESS ON SCHOOL PERFORMANCE.

	Tests		% Above Median Performance at Examination Expectancy of School Success					
	n Ach	UR (AMI)	HIGH (A)		MODERATE (B)		LOW (C)	
			N	%	N	%	N	%
1	High	Low	21	71.42	24	79.10	15	53.30
2.	Low	High	11	54.55	24	50.00	07	14.30
3.	High	High	04	50.00	13	69.20	17	47.10
4.	Low	Low	10	70.00	13	46.00	14	35.00

Differences Between	z	P
B1 and B2	2.90	.0019
B1 and C1	2.53	.0057
A1 and C1	0.24	NS
B1 and B4	2.57	.0051

* Mann Whitney one tailed U tests of predicated differences

Conclusion

The Achievement Motivation Inventory (AMI), developed on the basis of the TAT type pictorial cues and stories written to them, was found to provide two distinct measures - one on achievement related motive similar to test anxiety or motive to avoid failure (M_{AF}) and another on Achievement related values. The two showed negative correlation with each other. The former, i.e., the one similar to M_{AF} showed negative correlations with n Achievement, total school performance and self-expected vocational success. The latter, i.e., the score on AMI (total) and AI response (AMI) showed positive correlations with all the three variables mentioned above. The rural IX class boys showed higher score on Achievement values and lower on M_{AF} than those in urban schools. The Low SES and Low AS school boys showed similarly lower M_{AF} and higher Achievement values than those studying in High SES and High AS schools. The results, obtained, in a real school situation, provided support to the theory which predicts greater performance for individuals High on n Achievement (M_S) and Low on M_{AF} at some competitive task of intermediate difficulty.

CHAPTER 7

SUMMARY AND CONCLUSIONS

The Survey of Achievement Motive in High School Boys was under taken with the two following specific objectives:

i) To determine the level of achievement motive in high school boys; and

ii) To study the relationship of achievement motive with school performance.

The Survey was confined to IX class boys studying in Delhi higher secondary schools. Thirty two schools were selected on the basis of their socio-economic and achievement status. About 1000 boys were studied. These boys came from different socio-economic sections of this community.

Development of Instruments

A thematic apperceptive measure of achievement motive (n Achievement) was developed. Some 50 pictures, cues were tried out in three stages, out of which six were selected for use in the survey. The selected pictures showed satisfactory discrimination and evokability for achievement imagery. The pictures contain cues familiar to the high school boys. Achievement Motivation Inventory (AMI) was developed as the second instrument for obtaining data on achievement motivation. The Inventory was developed with the help of the pictorial cues and stories written to them by the high school boys. It contains 22 items each having six multiple choices. The Inventory gives four scores. The total number of achievement related responses (AI) from the score on **AR** (AMI). Similarly the **UR** and **TR** scores are obtained. A total AMI score is obtained by deducting **UR** scores from **AR** scores. It was hoped that the AMI would provide information on some aspects of achievement motivation similar to that shown by the thematic apperceptive measure. An interview schedule was developed for a study of pupil schema of achievement demands on him.

The thematic apperceptive measure and the AMI alongwith a group test of intelligence and a socio-economic status scale were administered to all the selected pupils in 32 schools. A random sample of about 200 Ss were drawn, taking every fifth from each school, for the study of pupil schema. These pupils were interviewed individually on the next day following the group tests in respective schools.

The TAT stories were scored by a team of three trained scorers. The scorers obtained coding reliability of .85 and above.

Results

Level of Achievement Motive

The *n* Ach level in Delhi school boys seemed well comparable with that found in certain studies with German and U.S. teen-age boys. The level was found to be lower than that shown in the Brazilian and the Japanese boys. The present boys showed slightly higher n Ach level than that shown by Madras boys in an earlier study by McClelland. The results in the present survey were not strictly comparable with the results obtained elsewhere as different pictorial cues were used in these studies. These therefore would need re-checking in more comparable and systematic studies.

The high school boys on the whole showed low verbalisation of several n Ach characteristics particularly goal anticipation (Ga+ and Ga-), obstacles (Bp and Bw), help by another person (H) and emotions (G+ and G-). The Ss showed apparently high expression of need (N), instrumental activity (I) and achievement thema (Ach Th).

n Ach by Schools and Social Class Variables

The rural and urban high school boys showed no difference in their n Ach levels. The boys studying in Low SES and Low AS schools showed n Ach level equal to that shown by those studying in schools with High SES and High AS. The former showed higher n Achievement level than those studying in schools with Middle SES and High AS. The latter was also lower than the level shown by the boys in high SES and high AS schools. The composite socio-economic status and the fathers' income showed no difference in levels of n Achievement. The boys of fathers with high and low education showed higher n Achievement level than that shown by the boys of fathers with secondary education. The boys of fathers with high education showed the highest level of n Achievement. The boys of fathers in occupation groups of skilled and unskilled workers showed higher level of n Achievement than that shown by the boys of fathers in clerical or small shopkeepers group. The boys from the semi-professional group showed the highest level and those from professional group (top most on the scale) showed nearly the lowest level of n Achievement. With education controlled, the working class boys showed higher level of n Achievement than that shown by the lower middle class whitecollar workers. Within the lower middle class (i.e., occupational group of clerks and small shop-keepers and shop employees), the boys of fathers with high education showed higher n Achievement level than those of fathers with secondary or low education. The working class boys of fathers with 'Low' education showed n Achievement equal in level with that of the lower middle class boys of fathers with 'High' education. The boys studying in schools with High SES and High AS showed greater verbalization of Bp than that shown by the boys in Low SES and Low AS schools. The rural boys showed greater verbalization of Bw than the urban boys.

n Achievement and School Performance

The n Achievement showed positive correlation with total performance at the school annual examination as well as performance in individual subjects. Several of the n Achievement characteristics also showed positive relationship with school performance. The school-wise analyses however, revealed erratic trends in the relationship between n Achievement and school performance. The High SES boys showed no relationship between n Achievement and school performance whereas low SES boys showed positive relationship. The Low SES and High SES boys showed no difference in their school performance as such. Both showed somewhere higher level of school performance than that shown by boys in schools with Middle SES. With fathers' occupational groups boys showed no relationship between n Achievement and school performance. However the boys of fathers with 'Low' education showed positive relationship. The boys of fathers with secondary and 'High' education showed low relationship. It appeared that the Need for Achievement tended to show positive relationship with the school performance under certain conditions and no relationship under certain other conditions.

Need for Achievement and Pupil Schema of Achievement Demands

It was assumed that boys with high n Achievement show perception of high expectations from them by teachers, peers and fathers i.e., they perceive high achievement demands on them. No such assumptions were confirmed. On the contrary the perception of fathers expected vocational success showed negative correlation with n Achievement. The self-expectancy of school success showed positive correlation with actual success in the annual examination.

The Achievement Motivation Inventory

Measures of Two Behavioural Characteristics

The Achievement Motivation Inventory (AMI), developed on the basis of the TAT type pictorial cues and stories written to them, was found to provide two distinct measures - one on achievement related motive similar to the motive to avoid failure (M_{AF}) and another on achievement related values. The two showed negative correlation with each other. The former, i.e., the one similar to M_{AF} showed negative correlations with *n* Achievement, total school performance and self expected vocational success. The latter, i.e., the score on AMI (total) and AI response (AMI) showed positive correlations with all the three variables mentioned above. The rural IX class boys showed higher score on Achievement values and lower on M_{AF} than those in urban schools. The Low SES and Low AS school boys showed similarly Lower M_{AF} and higher Achievement values than those studying in High SES and High AS schools. The results, obtained in a real school situation, provided support to the theory which predicts greater performance for individuals High on *n* Achievement (Ms) and Low on M_{AF} at some competitive task of intermediate difficulty.

Suggested Further Research

The results obtained in the Survey raised several questions. The following represent some of the more important ones which need further research:

1. The social class variables represent some of the extrinsic factors producing differences in levels of *n* Achievement. Similar research elsewhere have shown the effect of early independence training and parental attitudes as important factors in the development of

boys n Achievement. Do parents particularly mothers, of boys who had shown high levels of n Achievement start early independence training in their children ? Do such parents encourage the feelings of mastery and self-reliance in their children. The findings in the present research were contrary to the findings elsewhere, particularly in USA where the middle class boys uniformally show higher n Achievement level than those shown by working class boys. Systematic studies are, therefore, needed in child rearing practices, aspirations and attitudes of parents in different sections of the society. The pupil schema of parental aspirations also need more systematic studies.

2. The boys in High SES schools showed higher level of n Achievement as well as higher mean [illegible] and [illegible] scores on the AMI suggesting a higher level of avoidance motive than those in Low SES schools. But the High SES boys showed no relationship between their n Achievement and school performance. There were therefore some other motive (s) which seemed to help the High SES boys to attain a higher rate of performance at school examination. What are these motives ?

3. The IX class boys in Low SES schools showed, in the present survey, an equal level of performance at the school annual examination with that shown by the boys in High SES schools.

This was inspite of the well known and wide differences in the 'quality' of 'educational' environment' in the two groups of schools. The year by results at the Higher Secondary School Examination have been traditionally higher for the High SES boys than those in Low SES schools. The Low SES boys showed same n Achievement level as shown by the High SES boys, but a lower mean scores on TI and UI(AMI) suggesting a lower level of avoidance motive (than the High SES boys). This might have helped the present IX class boys in Low SES schools to attain the same level of school performance as that shown by the 'better off' boys in the High SES schools. Will these Low SES boys be able to maintain the same level of school performance in future and particularly at the High Secondary School Examination ?

4. The questions involved in areas 2 and 3 above suggest the importance of school and adolesent culture. What is the 'climate' like in High and Low SES schools ? What are their educational norms ? What is the relationship of these to n Achievement, achievement values and avoidance ? What are the sources of differences if found any in adolescent cultures in two types of schools ?

5. Admission into colleges of higher education are largely governed by two factors namely, the parents capacity to pay for college education

and the candidates result sat the Higher Secondary School Examination. It might be predicated that a very few of the present boys in Low SES schools would be able to go for higher education. What would these boys, particularly those with high *n* Achievement do then ? What vocations are they going to follow ? Will they be able to maintain the same level of *n* Achievement ? The *n* Achievement has been found to be related to social mobility (Strodtbeck, 1958) and higher rate of economic activity and productivity . (McClelland, 1961, 1965). The individuals with high *n* Achievement have also been found to show greater self reliance (McClelland, 1963; Winterbottom, 1958; Rosen, 1959). It is predicted that the Low SES school boys, particularly those with high *n* Achievement, would show the above menationed (i.e., greater social mobility, greater economic activity and productivity and greater self reliance) and such other behavioural characteristics, in their adult lives. In view of the nations developing needs, the above hypothetical situation would have important implications for social change and industrial growth in the country.

6. The thematic apperceptive measure of *n* Achievement obtained further theoretical validation in the present study. The *n* Achievement results appeared to be consistent

with the theory of Achievement Motivation as far as the performance at the school annual examination was concerned. The system of scoring of TAT type stories (the scoring system 'C') was found to be applicable to stories written to new pictures developed for the specific purposes of the survey. The two measures, one of achievement related motive similar to the motive to avoid failure, particularly the latter, obtained theoretical validation. These two validation and the latter, concurrent validation with some known questionnaires of anxiety. These instruments are likely to prove useful in further studies like those mentioned above.

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APPENDIX I

A SURVEY OF ACHIEVEMENT MOTIVE IN HIGH SCHOOL BOYS

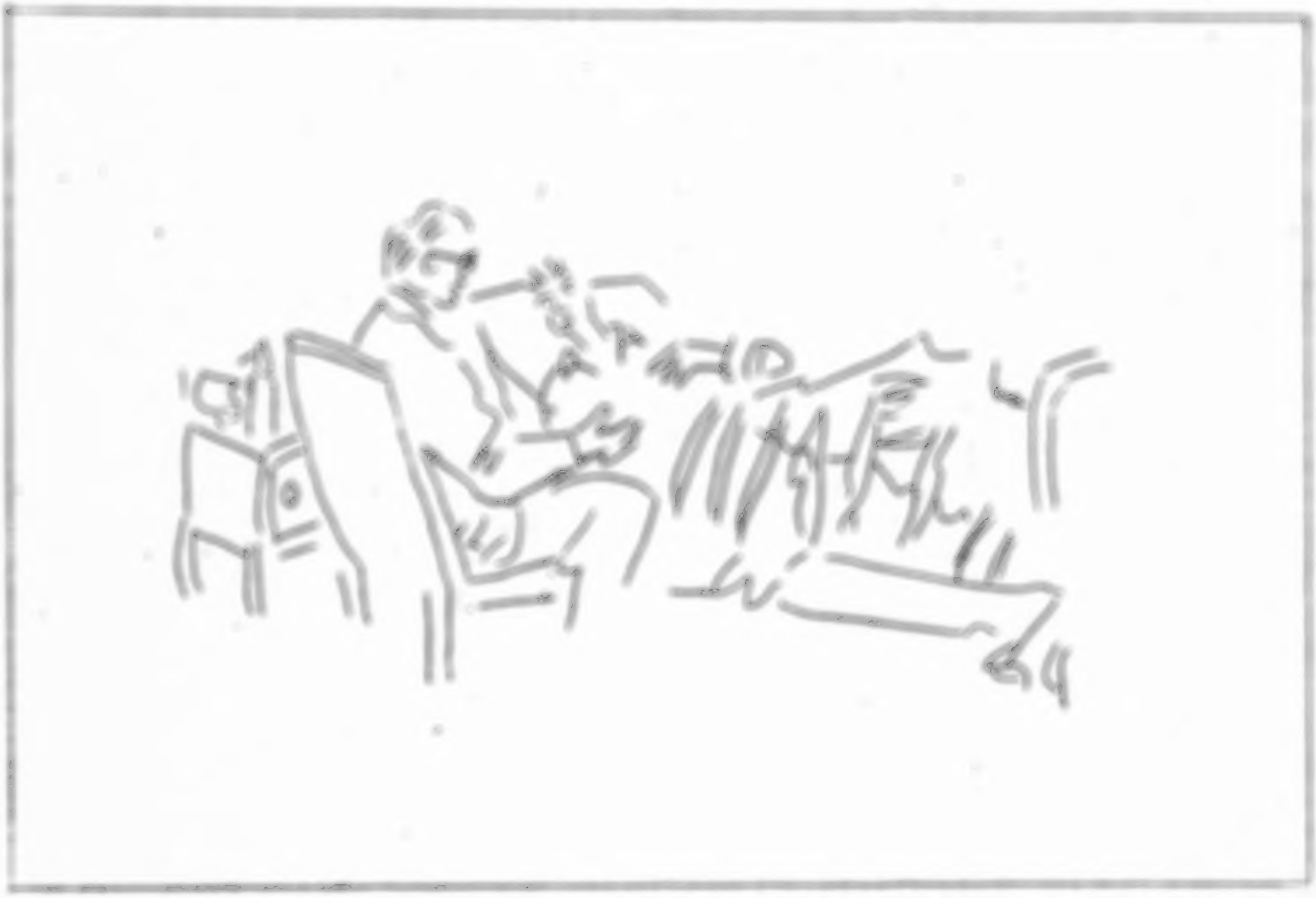
SES/AS	Code No.	School	Location
High SES/ High AS	07	Sardar Patel Vidyalaya	Lodhi Colony
	12	Govt. Model Hr. Sec. School	Ludlow Castle
	09	Dhanpatmal Hr. Sec. School	Roop Nagar
	08	Ramjas Hr. Sec. School No.2	Anand Parbat
	10	Salwan Boys Hr. Sec. School	Rajindra Ngr.
	04	K.L. Jain Hr. Sec. School	Sadar Bazar
Middle SES/ High AS	13	Govt. Boys Hr. Sec. School No.1	Sarojini Ngr.
	15	Govt. Boys Hr. Sec. School	Moti Bagh
	16	Govt. Boys Hr. Sec. School	Lodhi Road
	19	Govt. Boys Hr. Sec. School	Krishna Ngr.
	06	Govt. Boys Hr. Sec. School	Timar Pur
	27	Govt. Boys Hr. Sec. School	Mata Sundri Rd.
	11	Multani D.A.V. Hr. Sec. School	Rajindra Ngr.
	03	S.D. Hr. Sec. School	Ajmeri Gate
	01	Arya Hr. Sec. School	Lodhi Colony
Middle SES/ Low AS	20	Govt.Boys Hr.Sec. School No.2	Tilak Nagar
	18	Govt.Boys Hr.Sec. School No.2	Lajpat Nagar
	02	Vidya Bhavan Hr.Sec.School/No.2	Lodhi Road
	17	Govt.Boys Hr.Sec. School	Kalka Ji
	14	Govt.Boys Hr.Sec. School	West Patel Ngr.
	05	S.D.Gujrat Hr.Sec. School/shift	Kirti Nagar
	21	Govt.Boys Hr.Sec.School(1st/'	Mori Gate
	26	Govt.Boys Hr.Sec. School	Bela Road
	28	Chander Bhan Hr.Sec.School	Delhi Cantt.
Low SES/ Low AS	32*	Govt.Boys Hr.Sec. School	Chitorni
	31*	M.C. Hr. Sec. School	Bijwasan
	29*	Govt.Boys Hr.Sec.School	Khera Khurd
	30*	Govt.Boys Hr.Sec.School	Karala
	25	Govt.Boys Hr.Sec.School	Purana Quilla
	22	Govt.Boys Hr.Sec.School No.2	Subzi Mandi
	24	Govt.Boys Hr.Sec.School No.1	Qutab Road
	23	Govt.Boys Hr.Sec.School	Bara Hindu Rao

* Rural Schools

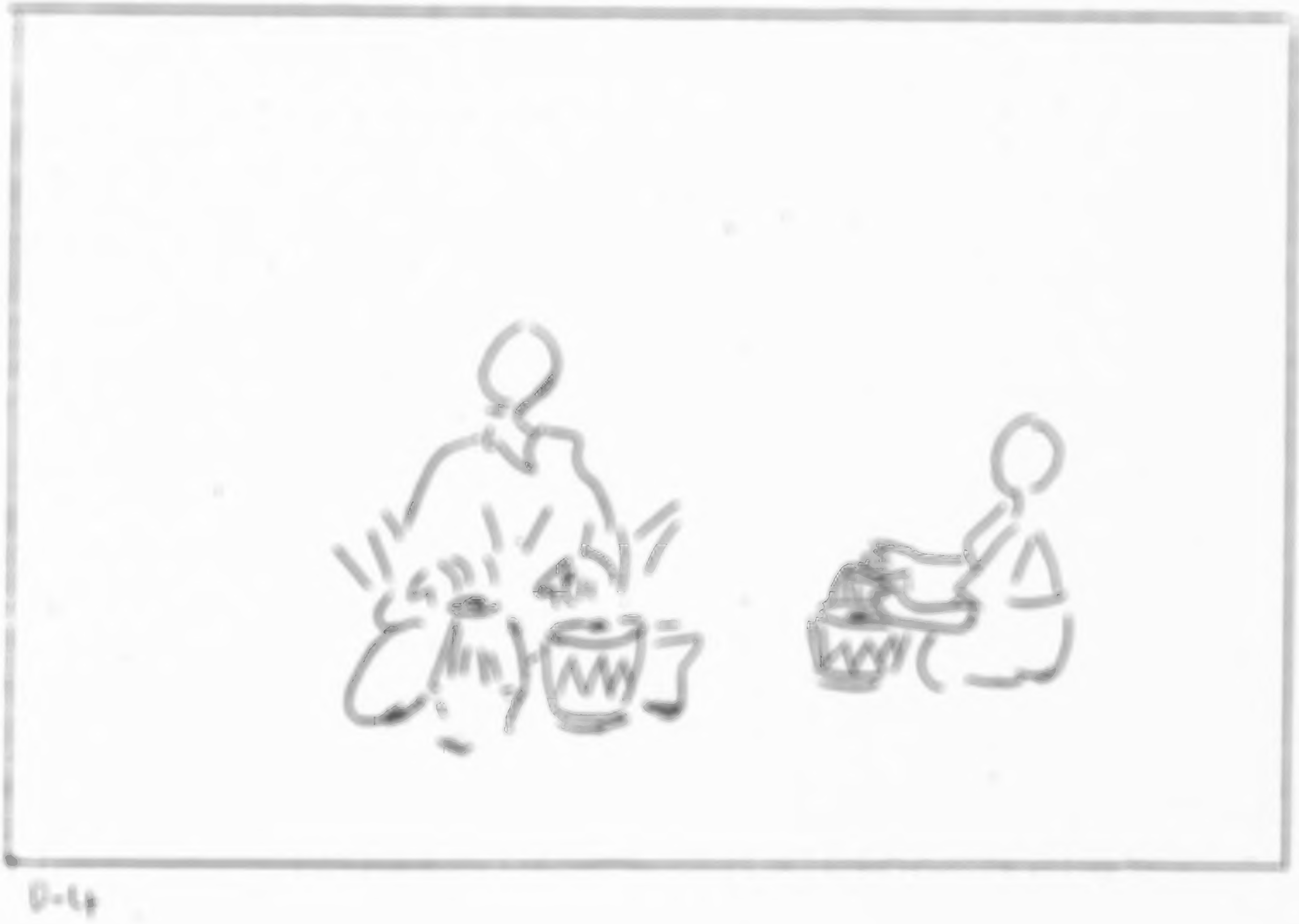
APPENDIX II

Code No.	Description of Picture Cues
A.1	A boy flying kite.
A.2	A boy day dreaming about his future career.
A.3	A boy with a note-book, an inkpot and a pen.
A.4	A Sculptor at a statue.
A.5	A boy reading a book sitting on a cot.
A.6	A group of students taking examination.
B.1	A boy with a book in his hand sitting under the street lamp.
B.2	A boy painting.
B.3	Three boys erecting a tent.
B.4	A doctor and a patient.
B.5	A boy looking at a toy aeroplane.
B.6	A mother and her son.
C.1	A boy hitting at the target.
C.2	A group of boys playing cricket.
C.3	A boy receiving a prize.
C.4	Two boys looking at the distant hills.
C.5	A boy reading a book.
C.6	A man handing over some papers to a boys sitting at his desk.
D.1	A teacher with a group of boys.
D.2	A farmer tilling the land.
D.3	A boy doing some experiment.
D.4	A boy learning 'Tabla' from his teacher.
D.5	Two boys playing hockey.
D.6	A relay race in action.
G.1	A boy looking at a globe.
G.2	A boy climbing up with help of a rope.
G.3	A boy repairing the hand-pump. Another boy/ /helping him.
G.4	An old man patting the back of a boy.

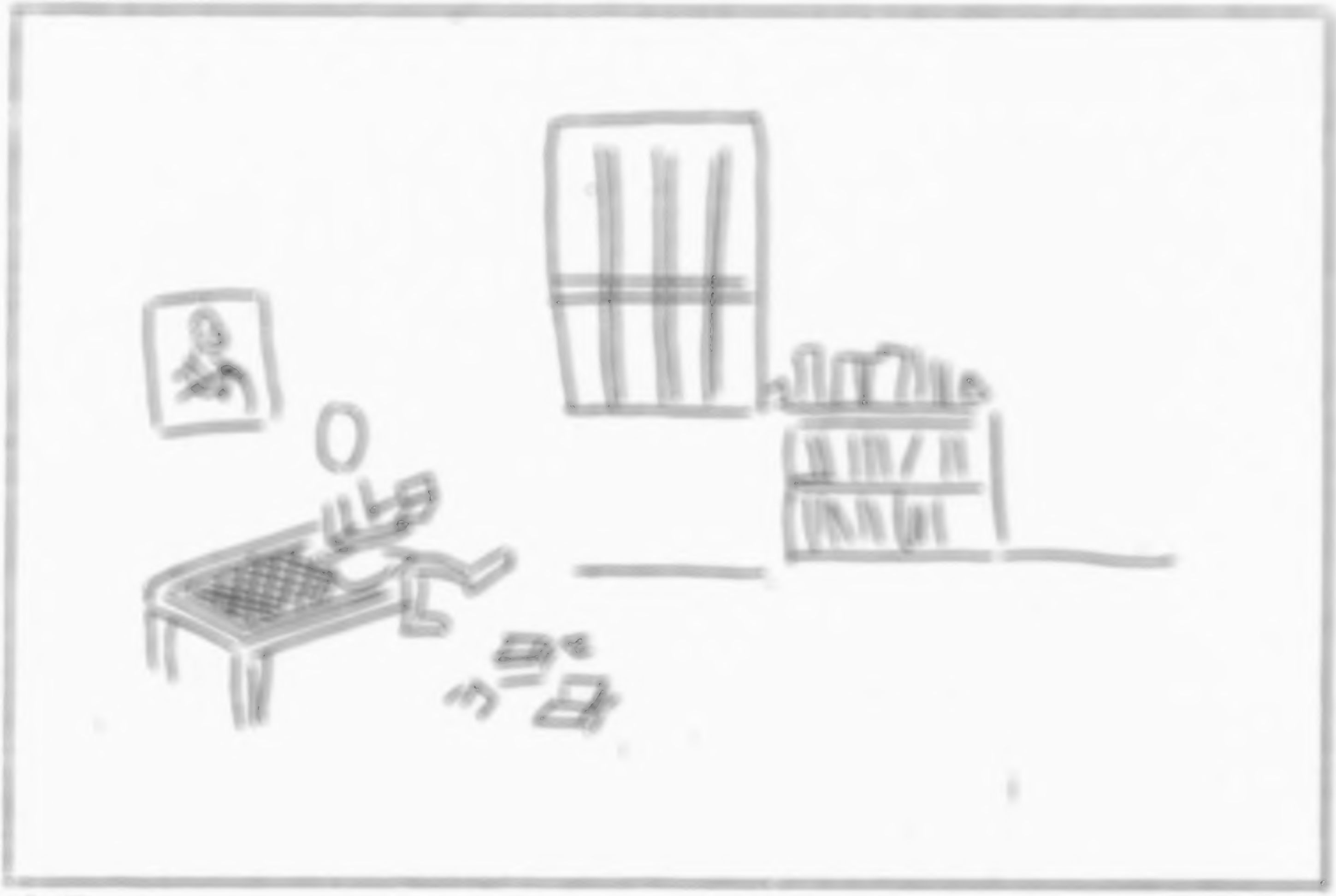
APPENDIX III



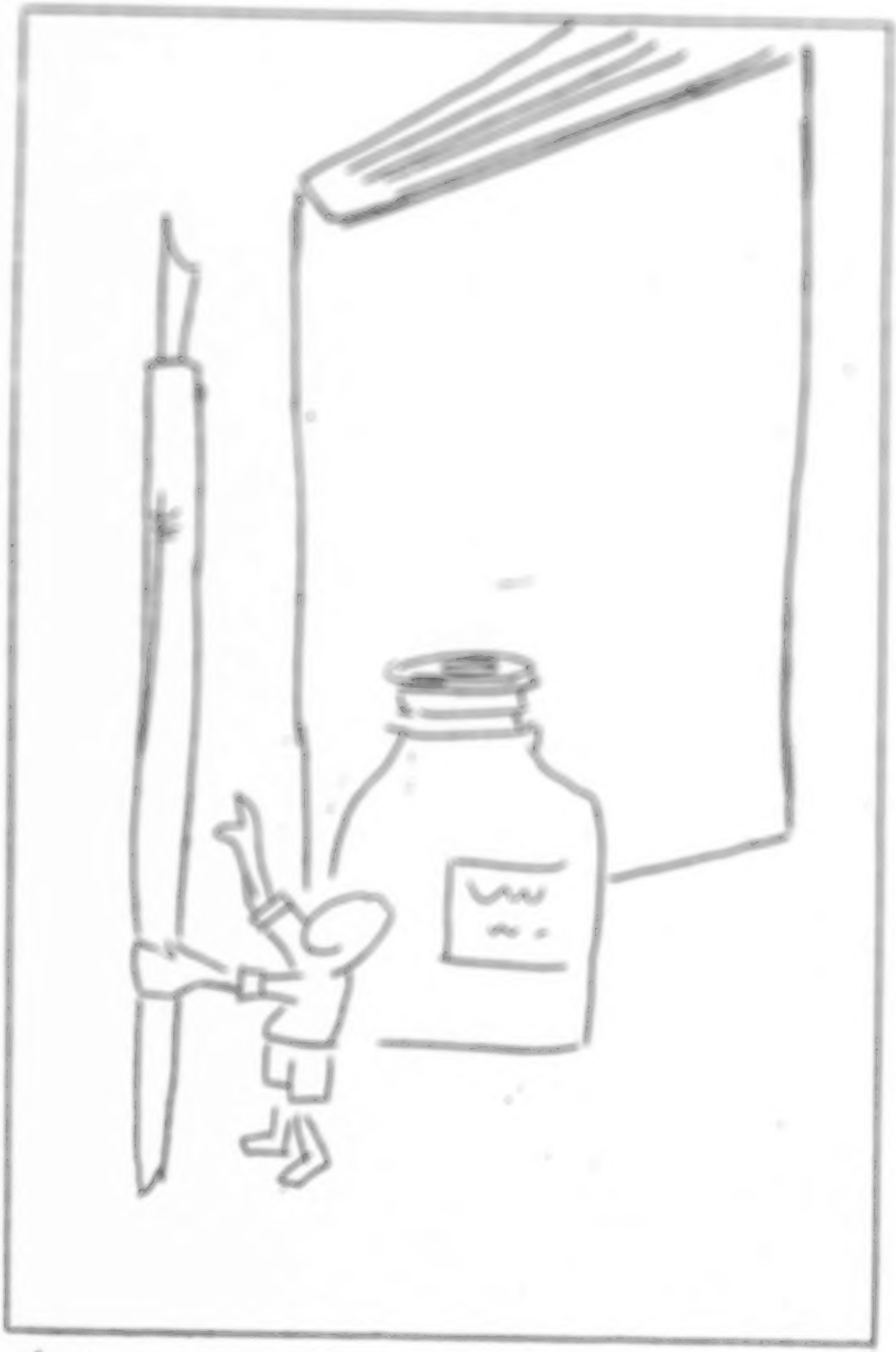
B-4



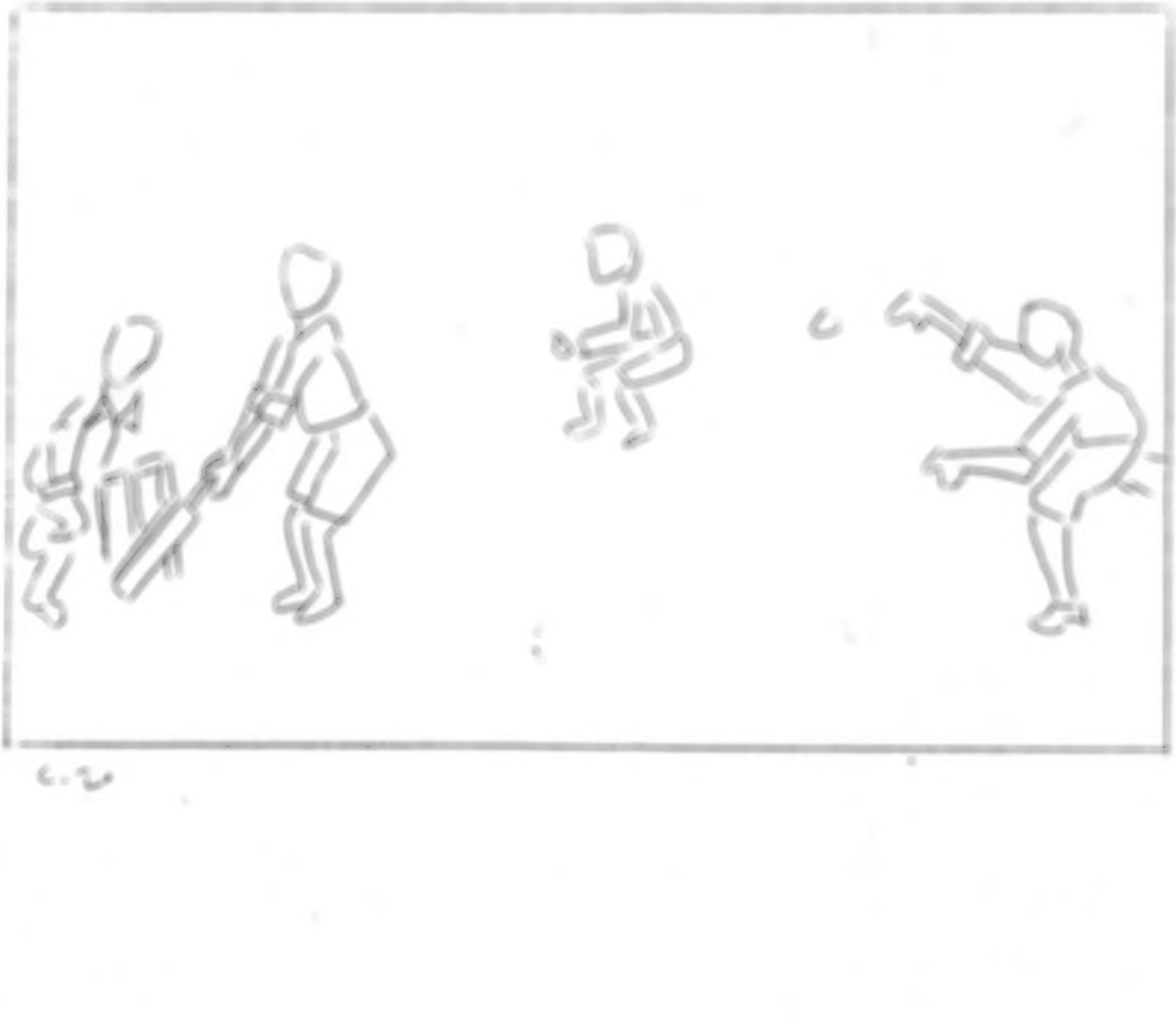
D-4



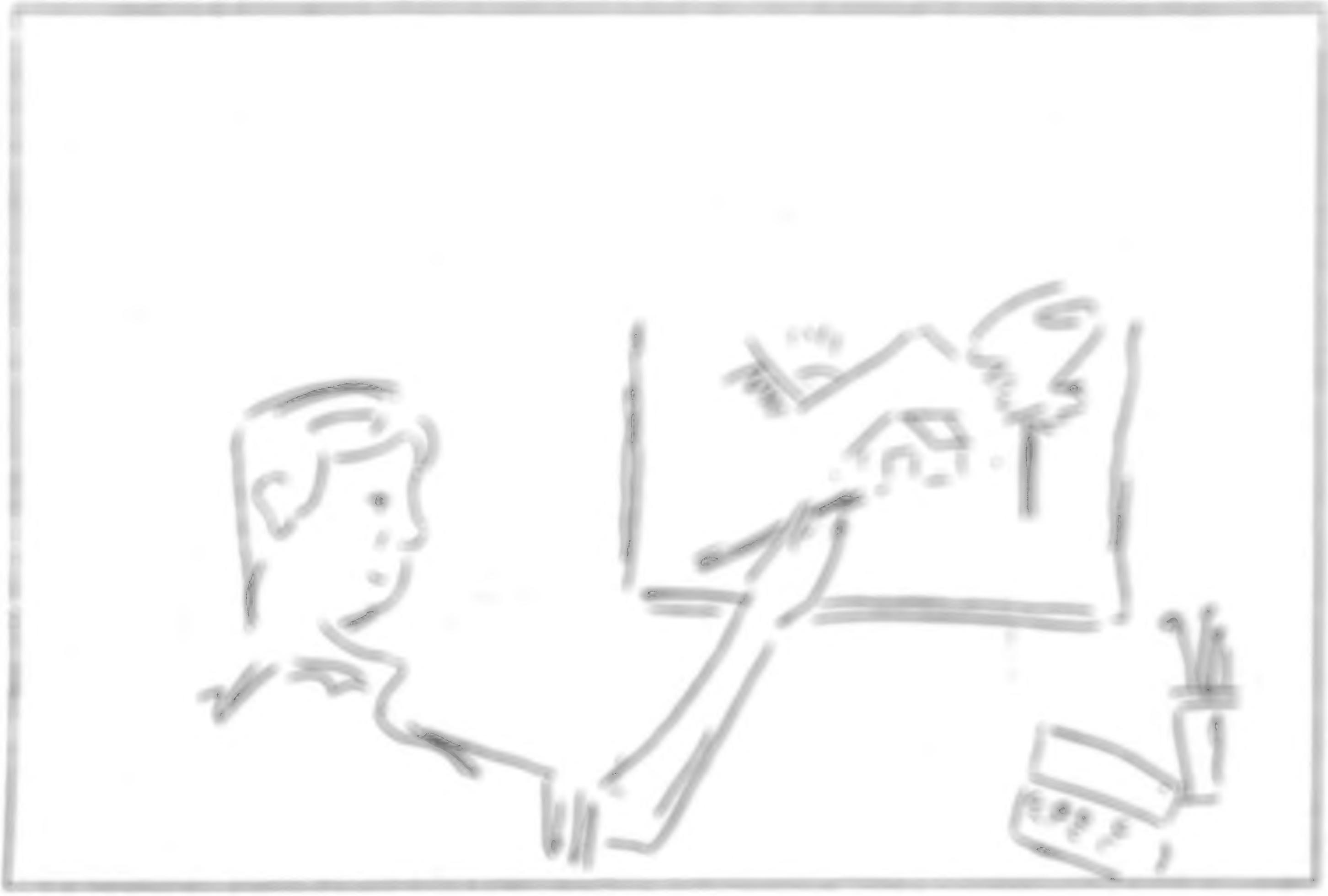
A-5



A-3



6.20



8-2

APPENDIX IV

ITEMS IN THE INTERVIEW SCHEDULE

1. (a) Competitions are often held in schools. Suppose you are participating in a competition of your choice and some of your friends are observing your performance. Now make a guess and tell me what level of performance they would expect from you in that competition.

   Answer:-

   (b) Now give your answer on this ladder.

   Answer:-

2. Every body takes up some work after completing his studies. Would you please tell me which occupation you would like to take up after completing your studies ?

   Answer:-

3. (a) Lets suppose that you get the job of your choice. Now tell me what level of success your friends would expect from you in your chosen occupation.

   Answer:-

(b) Now indicate the level of expected success on this ladder.

Answer:-

4. (a) Suppose one of your teachers is acting as a judge for a competition, in which you are one of the participants. Now make your best guess and tell me what level of performance your teacher would expect from you.

Answer:-

(b) Now tell me the level of expected success on the ladder.

Answer:-

5. (a) Now I would like to know about your fathers' expectation from you regarding your success in the chosen occupation. What level of success he would expect from you ?

Answer:-

(b) Give me your fathers' expectation on the ladder.

Answer:-

6. (a) Generally speaking, what level of success your teachers would expect from you in the forthcoming examination ?

Answer:-

(b) Now give your answer on the ladder.

Answer:-

7. (a) Lets suppose that your father is amongst the audience observing your performance in a competition. Now tell me what level of success he would expect from you in the competition.

Answer:-

(b) Please indicate your fathers' expected success from you on the ladder.

Answer:-

8. (a) Generally speaking, what level of success your friends would expect from you in the forthcoming examination ?

Answer:-

(b) Now give their expected success on the ladder.

Answer:-

9. (a) Normally, what level of success your teachers would expect from you in the chosen vocation that you named a short while ago ?

Answer:-

(b) Indicate your teachers' expectation from you on the ladder.

Answer:-

10. (a) Would you, now, tell me what level of success your father expects from you in the forthcoming examination ?

Answer:-

(b) Please indicate your response on the ladder.

Answer:-

11. (a) Suppose you are participating in a competition of your choice. Tell me what level of success you would expect to get in that competition.

Answer:-

(b) Now indicate the level of expected success on the ladder.

Answer:-

12. (a) Let us assume that you get the profession of your choice. What level of success you expect to attain in that profession ?

Answer:-

(b) Please express the level of your expected success on the ladder.

Answer:-

13. (a) Lastly, what level of success you expect to get in the forthcoming examination ?

Answer:-

(b) Please give the level of your expected success on the ladder.

Answer:-

14. What is your religion ?

Answer:-

APPENDIX 5

ACHIEVEMENT MOTIVATION INVENTORY ITEMS

1. A boy is sitting on a cot. He is having a book in his hand. An almirah full of books is lying nearby.

    1. He is preparing questions suggested by his teacher for the forthcoming examination.
    2. He is trying to find out the meaning of that word which no one in the class could explain.
    3. He is looking at the coloured picture given in a book.
    4. He is quickly doing the home task given by the teacher.
    5. He is thinking about the new application of the principles given in a book.
    6. He is reading a story.

2. A boy is making a picture.

    1. He is thinking whether to complete the picture or to leave it unfinished.
    2. He is doing practise to make pictures.
    3. He is making a picture to participate in the annual art competition to be held in the school.
    4. He is thinking whether he should colour the picture.
    5. He is learning the art of making pictures.
    6. He is thinking that when I would have learned the drawing well then I would be making beautiful pictures.

3. A boy is holding a model of aeroplane and is looking at it.

    1. He is thinking of becoming an engineer.
    2. He is guessing about the price of the aeroplane.
    3. He is observing as to how the aeroplane has been made.

4. He is carefully checking the aeroplane before demonsteating his flying skill.

5. He is waiting for his friend to get the aeroplane started by him.

6. He is thinking to repair the damaged aeroplane.

4. Two boys are standing facing the mountains.

1. They are enjoying the beauty of the nature.

2. They are planning to climb up to the highest peak of the mountain.

3. They are studying the herbs available on the mountain.

4. They have become tired after a lot of walking and are just relaxing for rest.

5. They are thinking about the new techniques of mountaineering.

6. They are thinking of writing a report after having inspected the mountaineous region.

5. A farmer's son is ploughing the field.

1. He is contributing his share to make up the deficit of food in the country.

2. He is thinking of showing after he has ploughed the land.

3. He is trying to get the maximum possible yield from his field.

4. He is ploughing the land to get sufficient food for himself and his family.

5. He is ploughing the field to sow seeds.

6. He is using the chemical fertilisers to make the land more productive.

6. A boy is doing something in the laboratory.

1. He is thinking that he should discoger some new thing.

2. He is practising to conduct experiment for the examination.

3. He is clearing the instruments kept in the laboratory.

4. He is busy in discovering new things.

5. He is doing an experiment in science.

6. He is looking at instruments placed in the laboratory.

7. A man and a boy are sitting with a 'Tabla".

1. The boy is learning to play on 'tabla'.

2. The boys is learning the tricks of the trade from his teacher in order to become a good artist or a good musician.

3. They are wondering as to why other persons have not turned up so far.

4. The boy is preparing for the examination in music.

5. The boy is absorbed in learning new music compositions from that man.

6. They are playing on the 'tabla' to entertain themselves.

8. Two boys are playing hockey.

1. They are playing hockey to pass the evening time.

2. They are learning hockey from the instructor.

3. They are practicing hockey to regain the trophy lost by them in the last competition.

4. They are playing for their amusement.

5. They are playing hockey to check whether the ground is suitable for playing a hockey match.

6. They are preparing for the final hockey match.

9. A teacher and some boys are in the class.

1. They are participating in a discussion competition on 'How to check the growing indiscipline in the schools.'

2. They are learning a new lesson from the teacher.

3. They are getting the complicated problem solved by the teacher.

4. They are taking part in a group discussion to evolve indigenous methods to solve the food problem.

    5. They are talking with the teacher.

    6. They are learning a new formula in mathematics from their teacher.

10. A teacher is sitting on a chair. A boy is standing by his side.

    1. The boy is informing the teacher about the truants.

    2. That boy has just now developed a new thing and he is eager to show it to the teacher.

    3. The boy is standing beside the teacher to recite his lesson.

    4. The boy is standing to hand over the letter from his father to the teacher.

    5. He is standing to show his essay to the teacher that he has prepared to submit for the essay competition.

    6. He is standing to understand a question from his teacher.

11. A boy is reading something.

    1. He is finding the meaning of that word which no body could tell in the class.

    2. He is reading a book of stories to pass the time.

    3. He is reading about new discoveries made in different fields.

    4. He is preparing the lesson assigned to him by his teacher.

    5. He is enjoying a book of film songs.

    6. He is preparing for some competitive examination.

12. The principal is giving something to a boy.

    1. He is presenting a certificate to that boy for keeping up the name of the school in the last competition.

    2. He is patting that boy for maintaining discipline in the class.

    3. He is giving some important instructions to that boy.

    4. He is giving a prize to the boy for his courageous act.

    5. He is giving a booklet of rules and regulations to the boy for the forthcoming regional competition.

6. He is giving the attendence register to the boy for taking attendance of the class in the absence of the class teacher.

13. Some boys are playing cricket.

1. They are learning to play cricket.

2. They are trying to improve upon their game.

3. They are playing to spend their recess period.

4. They are practising the game.

5. They are preparing to take part in the annual school competition.

6. They are playing an exhibition match to collect funds.

14. A boy is having some arrows in his hand. There is a target-board placed as some distance.

1. That boy is waiting for the end of P.T. period, so that he can go home.

2. He is learning the art of arrow shooting.

3. He is practising the arrow shooting to become a good arrow shooter.

4. He is trying to finish this game quickly so that he can play some other game.

5. He is thinking of different techniques of shooting.

6. He is practicing to get first position in the arrow shooting competition.

15. A doctor is sitting with a patient.

1. He is talking to the patient.

2. He is carefully examining the patient.

3. The doctor has given an injection to the patient and now he is waiting for his fee.

4. The doctor is prescribing the diet for him.

5. The doctor is carefully listening to the patient so that he can diagnose his disease properly.

6. The doctor is giving an injection to the patient for making him healthy.

16. A boy is sitting under a lamp. He is having a book in his hand.

    1. He is thinking to do some great work after completing his studies.

    2. He is thinking that now he should start preparing for the examination.

    3. He is trying to write something in the book.

    4. He is preparing all the possible questions which can be asked in the examination so that he may score the highest marks in the class.

    5. He is turning the pages of the book and trying to find out that page on which the questions to be asked by the teacher on the following day are given.

    6. He is checking whether there is any name written on the book that he found on his return from school.

17. A boy is doing something with the help of a hammer and a chisel.

    1. He is making a model.

    2. He is trying to improve his skill in the craft.

    3. He is checking whether the hammer and chisel work properly.

    4. He is repairing the broken model.

    5. He is trying to become a sculptor.

    6. By doing this he is having a physical exercise.

18. A boy is standing with a pen in his hand. A note-book.

    1. He will fill in the ink and write something on the note-book.

    2. He is thinking of writing an interesting story.

    3. He is imagining to become a writer.

    4. He is checking whether the pen writes properly.

    5. He is thinking of the outlines for an essay for the competition.

    6. He is solving assigned questions on the note-book with the help of that pen.

19. Some persons are doing various types of work.

1. They are discussing as to what they should do so that he can progress.
2. They are busy in their respective tasks.
3. They are working to earn money.
4. They are thinking about various ways to march ahead on the path of progress.
5. They are doing their work.
6. A man has to do something to earn his livlihood. These people are also doing some such work.

20. A boys is flying a kite.

1. He is amusing himself.
2. He is thinking as to how he should fly the kite so that he may win the kite-flying competition.
3. He is wondering whether he should participate in the tommorrow's competition of kite-flying.
4. He has just now brought the kite out of the money that he got from his mother and is now trying to fly it.
5. He is thinking to be a good kite-flier so that he may compete with his companions.
6. He is thinking whether he should compete with the other kiteflier.

21. The teacher is teaching in the class.

1. The teacher is trying to complete the course.
2. He is teaching to get the salary.
3. He is making a study of effective methods of teaching.
4. He is answering the questions put to him by the students.
5. He is punishing those students who have not done the work.
6. He is making the difficult lesson easier by giving new examples.

22. Three boys are running a relay race.
    1. They are practising to improve upon their game.
    2. They are learning the relay race during the games period.
    3. They are carrying out the instructions.
    4. They are trying to surpass each other in the race.
    5. They are demonstrating their game.
    6. They are observing the sports day.

APPENDIX VI

INVENTORY OF QUALITIES

INSTRUCTIONS

This Inventory has three parts: one each for qualities in your best friend, boys most liked teacher and your father. Each part contains five pairs of qualities. You are required to select and check one quality in each pair. Remember that you have to check that one quality in each pair for which you like your friend, or teacher or father.

Each quality is numbered. Put a tick mark (✓) on the number of that quality which you like in your friend, teacher and father.

Remember you have to check one quality in each pair

Qualities in an Intimate Friend

(1)

(a) He is good in studies.

(b) He defends me in quarrels with other boys.

(2)

(a) He helps me during examinations.

(b) He wants me to work independently.

(3)

(a) He always stands first in the class.

(b) He does not keep any secret from me.

(4)

(a) He likes me.

(b) He participates in school competitions and wins some prize or the other.

(5)

(a) He wants me to get great succes in life.

(b) He refuses nothing to me.

Qualities of a Popular Teacher

(1)

(a) He teaches us very well.

(b) He is very affectionate to his pupils.

(2)

(a) He wants me to participate in school activities and demonstrate the best of skill.

(b) He pays equal attention to all.

(3)

(a) In case we don't follow he makes us understand again and again.

(b) He wants all of us to secure good marks.

(4)

(a) He encourages the boys to put questions in the class.

(b) He is a simple man with pleasing personality.

(5)

(a) He helps the poor and weak students.

(b) He wants me to lead in all subjects.

Qualities of a Father

(1)

(a) He wants to provide us the highest possible education.

(b) He loves us very much.

(2)

(a) He gives us every thing we demand.

(b) He encourage me in every type of work.

(3)

(a) He helps me in my school work.

(b) He wants me to become a great man.

(4)

(a) He provides me every possible confort.

(b) He wants me to work independently.

(5)

(a) He wants me to get success by virtue of my own efforts.

(b) He never fires us.

APPENDIX VII

ILLUSTRATIVE SIX-STORY RECORDS FROM TEN PUPILS

The pictures used for the six stories in this appendix were B4, D4, A5, A3, C2, B2 in that order. These pictures are described in Appendix III. In recording these stories a separate paragraph is used for the response to each of the four question that were asked in order to insure complete coverage of a plot. These four sets of questions were:

1. What is happening ? Who are the persons ?
2. What has led up to this situation - that is, what has happened in the past?
3. What is being thought - what is wanted ? By whom ?
4. What will happen ? What will be done ?

Pupil No.1-Story 1

"In the picture a doctor is asking something from a patient. A doctor and a patient are here. The patient is telling about himself.

"Before this a person got ill. He may have eaten some dirty things."

"The Doctor is thinking to give some medicine to him. The patient is thinking that he should be all right soon".

"Now the doctor will give medicine to him and the patient will drink it. The patient will be all right."

1.2

"In the picture two 'tabla' players are sitting. One of them is a 'Tabla Player' and another is a drum-beater. Both of them are beating drums.

"Before that they have made all preparations because in that way the people will be attracted towards them.

"The Tabla player and the drum-beater desire that the music should be good. Both of them are thinking that. They are to earn a lot of money to-day.

"Now they will start music and will earn money."

1.3

"In the picture, one boy is sitting on a cot and is reading something. Here are a boy, a photo of somebody, a window and books lying on a tabla.

"Before this the boy picked up the books, because he is to read.

"The boy is thinking to memorise that lesson and desires that he may get through in examination.

"The boy will take examination and will get through".

1.4

"In the picture the boy is looking towards a pen. He is quite short. In the picture, there is a book, an inkpot and a pen.

"Before this the boy has kept all the things, because he wants to write something new.

"The boy is thinking that now the pen should be picked up. He desires that now he should start writing.

"Now he will pick up the pen and will start writing".

1.5

"In the picture cricket is being played. One boy is batting and another is bowling. They are all players of cricket.

"Before this they have collected all the material and have numbered themselves for playing.

"The bowler is thinking that he should be out soon. Batsman is thinking that he will make a four. Wicket-keeper is thinking that he may catch the ball and he may be out.

"Now the bowler will do bowling and the batsman will be out or make a four or the wicket-keeper will catch the ball".

1.6

"In the picture a person is painting a scenery. In the picture there are colours, brush and a boy.

"Before this the person has collected all the material because he was to prepare a beautiful picture of scenery.

"The person is thinking whether the picture is being prepared good or not. The person desires that the picture may be good.

"The picture will be ready as/and the boy will show that to his friends and people at home. He will keep the things at the proper place."

Pupil No.2 - Story 1

"A doctor is examining a patient. The patient, pointing towards the heart, is telling that he is having pain there, so doctor is examining his heart.

"The doctor examined the patient attentively to find out the disease, with which he is suffering. This has happened because he may have done some wrong thing.

"The doctor wants to give good medicine and the patient wants to recover soon so that the pain may stop.

"Now doctor will give a suitable medicine to him. The patient will recover. If it will take time for the patient to recover then he will take rest."

2.2

"Two men, a woman and a boy are playing on Tabla. The woman can better play on Tabla than the boy who is still learning it.

"Because the woman can well play on Tabla, so the boy is learning it from her.

"The woman wishes to teach Tabla playing properly to the boy. The boy wishes to learn Tabla playing even better than the teacher.

"The woman will go on teaching Tabla-playing and the boy will go on learning Tabla-playing keenly."

2.3

"Here is a woman and a boy. Books are lying near the feet of the boy. He is studying.

"But in a short time his mother came from that side and she scolded the boy for keeping the books scattered all over on the floor. It is possible that before this the boy might have had examinations and his books are lying on the floor.

"Mother thinks that her son should do good work and not bad work. The boy wants that he should study whole heartedly.

"Now as asked by his mother the boy will pick up the books and will work according to her directions."

2.4

"Here are a boy, a pen and an inkpot. The boy is telling somebody about the pen by pointing towards it by his finger.

"That I have filled in excessive ink in it and that I am putting it in by keeping it up.

"The boy wants that pen may be repaired soon so that he may do work.

"But sorry, his pen is not working and now he cannot work. But he will get a new pen by telling his father and will do his work."

2.5

"Boys are playing game. They are playing cricket. But their material is not proper. Boys are tall and bats are small.

"Therefore they are not able to play properly, because their material is not proper. Some are tall some are short, bat is small.

"All wish that material should be according to their sizes. Tall boy wants that bat should be big and short boy wants that it should remain.

"Now the problem is that he should bring a big bat and this thing can only do if they collect subscription and bring a new bat."

2.6

"Here a man is making a picture. He has depicted a sun, cottage etc. in this picture.

"One day while sitting he thought of becoming a painter so he is practising for making pictures.

"Now he wants to make good pictures to become a painter.

"Now he will go on working attentively and will become a painter. But he has decided that he will not leave any picture half finshed."

Pupil No. 3 - Story 1

"In the picture there is a doctor and a patient. Doctor is feeling the pulse of the patient.

"Before this patient had taken some dirty things, so he had become sick.

"Doctor is examining him. Patient is telling him about his illness and he wants medicine.

"Now doctor will give him medicine. Patient will take it. Thereafter the doctor will go."

3.2

"Teacher is teaching Tabla-playing to the pupil. One of them is a teacher and another is a pupil.

"Before that the pupil had forgotten something so teacher is telling him the same. This has happended because the pupil is weak.

"Teacher is thinking, what type of pupil he has. He wishes to make the pupil an expert in Tabla-playing.

"Teacher will teach him with love and pupil would listen to him and will start learning."

3.3

"Student is reading a book. Some books are scattered on the floor. He is a student.

"Before this the student has never learnt his lesson because he used to live in a bad company of persons.

"Student is thinking about his examination that whether or not he will get through. He wants to get "first" in the examination.

"The student will study whole heartedly and will get through. In future he will work from the very beginning of the year."

3.4

"A dwarf is standing with a big pen, inkpot and a book. He is a small statured person, who is called a dwarf.

"The dwarf has come to this country for the first time. Because he has come from a country of dwarfs, so he has never seen such a big thing before.

"Dwarf wants to know about it. He wants to write with it on the book after filling ink in it.

"He will not be able to pick it up and will go. He will leave it and will say that it is useless."

3.5

"Four boys are playing a game called cricket. All the four are school children and are playing after returning from school.

"Before that they had gone to school for studying. Now they have returned. After studies they want to entertain/amuse themselves. Therefore they are playing.

"Batsman wants to hit hard the ball and the other wants to catch the ball.

"He will hit hard the ball but other player will catch the ball. After that game will stop."

3.6

"A man is making a picture. He is a painter.

"Before that the painter had mixed up colours because he want to make a picture.

"The painter wants to make a picture of a beautiful village.

"The painter will complete the picture and will sell it that to king. He will get a big prize."

Pupil No. 4 - Story 1

"There are two persons. One of them is a doctor who is examining the patient. He is feeling the pulse of the patient. Medicines are kept near the patient. He is feeling the pulse of the patient to know how fast it is beating in a minute.

"Before this the patient was sick. Now doctor will give him medicine.

"Doctor is feeling the pulse.

"Now patient will recover".

4.2

"A man is sitting and a boy sitting near him is playing on Tabla. "Before this there had been a music and dance programme.

"Tabla players are listening the tune of the song.

"Now there will be a music and dance programme."

4.3

"A boys is reading a book and some books are lying near him.

"Before this there may have been a quarrel because he may not be studying."

"Boy is thinking to leave studies.

"His life will be ruined and in future he will have to work like a labourer."

4.4

"In this picture a boy is standing. He is a boy.

"Before this he has got up to fill in ink.

"He is thinking to fill in ink.

"Now he will write."

4.5

"A boys is throwing a ball and other boy is ready to play with ball. They are players.

"Before this the ball had been thrown. They are playing. Therefore----

"The bowler wants to bring down the three sticks behind the other boy.

The boy who is playing will hit the ball and will save by running."

4.6

"A man is making a picture. He is an artist.

"Before this he has made the pictures of man, mountain and sun. These are for sale.

"He is thinking to make very very beautiful pictures. He wants to make it beautiful.

"Now he will sell and earn money and will make more pictures."

Pupil No.5 - Story 1

"Doctor is examining the patient. One is patient and another is a doctor.

"Before this a man fell ill. He had eaten some wrong type of thing.

"Doctor is thinking, whether or not he can be saved. Doctor wants to save the patient.

"Doctor will examine the patient. Doctor will give medicine to the patient.

5.2

"One man is teaching Tabla-playing and another is learning. They are men, singer and learners.

"Before this the man who teaches Tabla-playing would have come. He was to teach them.

"The teacher is thinking whether or not he is playing Tabla properly. He desires that he should learn quickly.

"If he will learn this, then the teacher will start a new chapter. If he will not learn then he will teach him again."

5.3

"A child is reading a book. He is a student.

"Before this somebody had thrown his books and some books are torn.

"Child is thinking that he will get a new book and it can be pasted. He wants that the old books may be all right.

"Now he will be beaten. He will try to paste the torn books."

5.4

"There is a big pen. Before this a child is standing and there is also a big book and an inkpot.

"Before this the child was not here. Somebody has kept it here now.

"Child is thinking, how it has become so big and who writes with it. He wants to write with it and wants to read book. He wants to take ink from the inkpot.

"Now he will try to get it, but his labour will go waste because he cannot even pick up the same."

5.5

"A few persons are playing cricket. They are players.

"Before this the bowler had thrown the ball and batsman hit the ball and because of the hit the ball went away.

"Fielder is thinking that the player who is running will catch the ball. They want that they may catch.

"Now he will catch that and player will be out and another player will play and other fielder will pat him."

5.6

"A child is doing drawing. He is making a senery. He is a teacher.

"Before this he had done drawing with pencil. Then he filled in colours because that makes it beautiful.

"Boy is thinking that if it is prepared nicely then he will get 'good' from the teacher. He wants 'good'.

"After that he will keep the things and show to the teacher. Teacher will give him 'good".

Pupil No. 6 - Story 1

"In the picture a person is seeing a patient. One is doctor and another is a patient.

"Before this he was ill because he would not have cared for his health.

"Doctor is thinking about the medicine which may be given to the patient. The patient wishes to recover soon.

"Now after giving medicine the doctor will go and his parents will look after him."

6.2

"In the picture a man and woman are playing on 'Tabla'. They show their art.

"Before this there came Tabla players because they wanted to earn their livilihood.

"They are thinking that they should get more and more money. They want money.

"Now after playing on Tabla and getting money they will go and they will play on Tabla somewhere else."

6.3

"A boy is standing with a book in hand. His mother is looking by standing behind him. Books are scattered around him. They are members of the family.

"Before this he had come in this room, because he was to make his life.

"His mother was also thinking whether or not the boys is studying.

"Mother will go and thereafter the boy will also go after studying. Again the boy will come and study."

6.4

"A boy is trying to hold a pen. A notebook and ink are lying near him.

"Before this the boy had come there because he was to do his school work.

"The boy is thinking to do the work quickly. He wants to go early for play after completing his work.

"Now the boy will do school work. Thereafter he will remember his lesson."

6.5

"Boys are playing cricket. They are small boys.

"Before this they had come and had chosen their partners, because they were to amuse themselves.

"The boys who are fielding are thinking to out the players soon. They want to out the maximum players.

"Now the boys who were fielding will play and thereafter they will be out.

6.6

"A boy is making a picture with colours. He is a painter.

"Before this he had brought the material; because he was to prepare pictures.

"The boy is thinking that the picture prepared by him should be very good, He wants to get "very Good" on that.

"Now he will make picture and after keeping the things he will go for his entertainment."

Pupil No. 7 - Story 1

"In the picture there is a doctor and a patient. Doctor is asking about the health of the patient. The patient is telling something about the pain which he is having.

"Before this, the patient was having some pain and his heart was beating.

"The doctor is thinking that with what disease the patient is suffering and what type of pain he is having.

"Now the patient will be given medicine to drink."

7.2

"In the picture, there are two person and they are talking about 'Tabla', whether or not it is all right.

"Before this the Tabla player had played on Tabla, because before that some 'Qawalies' were going on.

"They are thinking whether or not the Tabla is being played properly and people like it.

"Now songs will be sung and thereafter Tabla players will go and the programme will end."

7.3

"Here is a boy and a book is in his hand. He is looking towards a photo.

"Before this the boy was studying and was memorising something because he is having examination.

"The boy was thinking that now I will get through in the examination. He wished to get through the examination.

"Now the boys will stop studying and will read one book from the books lying before him."

7.4

"Pen is lying in the room and boy is painting towards that pen. Here is a boy and a bottle.

"Before this boy was not painting **with** the pen becuase he did not require it.

"The boy is thinking that he will get the pen and will write with that. He wants to have the pen.

"Now the boy will take the pen and will write with it."

7.5

"There are five boy in the picture. They are playing cricket. One boy is bowling and one is playing. Two persons are fielding.

"Before that the boys fixed the wickets, divided partners becuase they were to play.

"Player is thinking that he will win and bowler is thinking that he will win. Want to win.

"Now one team will win and after that all will go home."

7.6 "There are two women in the picture and there is bouquets and a cottage and the sun has risen. Women are pointing towards the cottage.

"Before this they were going somewhere. Now becuase they have shown their house to a traveller.

"They are thinking that this and my house. Woman wants that she may get pen.

"Now woman will go to her house and will give pen to her."

Pupil No.8 - Story 1

"A man is sitting near the cot of another man. The man who is tying on the cot is sick and the other man is his father.

"That man has met an accident. When this wounded man was crossing road a van dashed against him."

8.2

"There are two men, who are playing on an instrument. They are musicians.

"When they were invited then they had promised to give a music programme there.

"Now they are thinking to get rid of those persons. Now they want to go."

8.5

"A boy while sitting is thinking something. He is sitting on a banch. He is a student.

"He has failed in examination because he did not study.

"Now he is thinking that how he should study. He wants to gets through in the examination.

"Now he will study. Now he will study sincerely."

8.4

"The student is picking up his pen and will start writing. His name is Mohan.

"Before this his father had beaten him for not studying.

"He is thinking about his future. He wishes to go ahead in his studies.

"He will study. He will show his father that he is a hard working boy."

8.5

"Cricket match is being played. They are students. They are players.

"Before this they were sitting in class becuase they were to study.

"Goal keeper is thinking that there may not be any goal. He wants to save from goal. They want to win match.

"They will win in the match. They will get prize."

8.6

"He is an artist, who is making a picture of mountain.

"Before this he was a teacher in a school and had passed examination.

"He is trying to make it a beautiful picture so that others may praise after seeing it.

"Now he will send it to press for printing in books and people will feel happy after seeing it."

Pupil No.9 - Story 1

"In the picture there is a doctor and a patient. Doctor is examining the patient.

"Before this the patient was.. His condition was bad.

"Doctor is thinking that what should be done for this patient.

"If the doctor is unable to diagonose the disease they will go."

9.2

"Tabla players are playing on Tabla.

"Before this they were learning Tabla playing becuase they were fond of playing on Tabla.

"Both of them are thinking in their mind that how they should play on Tabla.

"Now both of them will play on their Tablas and will play different kinds of tunes."

9.3

"A young student is studying. He is a student.

"He wanted to study becuase he was fond of studies.

"That boy is thinking in his mind that examination has come very near now how will he study.

"After some days examination of the student will start. Thereafter he will study hard."

9.4

"A short boy while standing is looking at a pen. A small inkpot is lying near him.

"Before this that child had seen that.

"The child is thinking that how should he get that pen to write.

"The child after picking up the pen will start writing."

9.5.

"In the picture there are a few players who are amusing themselves by playing cricket.

"These players are fond of playing cricket. One player is throwing ball towards other.

"The other players are thinking that what should be done now, how the players should stand.

"After that players will start playing the game."

9.6

"In the picture a student is painting a cottage. In the picture there is a tin of colours and a few brushes.

"Before that he was painting some other place to decorate the house.

"Now the student is thinking that what should be painted now. How painting should be done.

"Now student will paint to decorate house."

Pupil No. 10 - Story 1

"In the picture there is a scene of a hospital. Here a doctor is examining a patient, who is a soldier.

"Before this a wounded soldier has been brought to the hospital.

"The soldier is thinking that after getting alright soon he should go to the peaks of 'Himalayas' to guard his mother land.

"Now doctor will ...."

10.2

"Two men are playing on Tabla. Both of them are Tabla Players.

"Before this they were playing on Tabla because good Table playing needs practicing.

"Both of the persons wish to play well on Tabla and earn reputation.

"Now both of them will play on Tabla and their reputation..........."

10.3

"A student is studying. He.....

"Before this some books had fallen down so he does not want to read those books.

"The student after reading the book is thinking over it.

"This child after studies will become wise and will serve his country".

10.4

"In the picture a short boy is shown holding a pen and book is lying near by.

"Before this the child after taking notebook, book and pen was preparing himself to write.

"Now the boy will write something in book and will fulfill his ambition".

10.5

"Some players are playing.

"Before this also, the players were playing and players want to out the players. Because all want to win.

"Player is thinking to make maximum runs and bowler is thinking to out the maximum players.

"Now one team will win out of the two teams."

10.6

"An artist is filling the colours in a picture.

"Before this the painter had prepared a picture because he is poor and wants to earn his livlihood from it or this is his hobby.

"The painter is thinking to prepare the picture and earn reputation.

"In order to fulfill his aim he will try to make the picture very beautiful."

SCORING FOR THE ILLUSTRATIVE STORIES*

Pupil No.	Story No.	UI -1	TI 0	AI +1	N +1	I+ +1	I? +1	I- +1	Ga+ +1	Ga- +1	Bp +1	Bw +1	Nup +1	G+ +1	G- +1	Th +1	n Ach Score
1.	1		0														0
	2			1	1	1											3
	3		0														0
	4		0														0
	5		0														0
	6			1	1	1										1	4
Total				2	2	2										1	7
2	1			1	1	1										1	4
	2			1	1	1	1									1	4
	3			1	1	1										1	4
	4		0														0
	5	-1															-1
	6			1	1	1										1	4
Total		-1		4	4	3	1									4	15
3	1		0														0
	2			1	1											1	3
	3			1	1	1										1	4
	4	-1															-1
	5	-1															-1
	6			1	1	1									1	1	5
Total		-2		3	3	2									1	3	10
4	1		0														0
	2	-1															-1
	3	-1															-1
	4	-1															-1
	5		0														0
	6			1	1	1											3
Total		-3		1	1	1											0

Pupil No.	Story No.	UI -1	TI 0	AI +1	N +1	I +1	I? +1	I- +1	Ga+ +1	Ga= +1	Bp +1	Bw +1	Nup +1	C+ +1	G- +1	Th +1	N Ach score
5	1		0														0
	2			1	1		1									1	4
	3	-1															-1
	4	-1															-1
	5		0														0
	6			1	1									1		1	4
	Total	-2		2	2		1							1		2	6
6.	1		0														0
	2	-1															-1
	3			1													1
	4		0														0
	5		0	1	1												0
	6	-1		2	1												2
	Total																2
7	1		0														0
	2		0														0
	3		0														0
	4		0														0
	5			1	1												2
	6	-1															-1
	Total	-1	1	1													1
8	1	-1															-1
	2	-1															-1
	3			1		1											2
	4			1	1	1										1	4
	5			1	1			1						1		1	5
	6			1				1						1		1	4
	Total	-2		4	2	2		2						2		3	13

Pupil No.	Story No.	UI -1	TI 0	AI +1	I +1	I+ +1	I? +1	I- +1	Ga+ +1	Ga- +1	Bp +1	Bw +1	Nup +1	G+ +1	G- +1	Th +1	N Ach Score
9	1		0														0
	2		0														0
	3			1													1
	4		0														0
	5		0														0
	6		0														0
Total				1													1
10	1		0														0
	2			1	1	1										1	4
	3			1		1										1	3
	4			1		1			1							1	4
	5			1	1												2
	6			1	1	1										1	4
Total				5	3	4			1							4	17

*The Scoring System 'C' developed by Smith and Feld was followed in scoring these stories.

APPENDIX VIII

RATING SCALE: SOCIO ECONOMIC BACKGROUND OF STUDENT POPULATION

(Scale on which the schools are to be rated by)
the respective Zonal Inspection of Schools

The following is a five point scale on which the schools are to be rated in respect to the socio-economic background of the student population. The scale is as follows:

Groups*

A.	HIGH	School in which the majority of the students come from richer sections of the society e.g., business people and high government officials, professional people like senior doctors, lawyers etc. (The family income may be about a thousand or above).
B.	HIGH MIDDLE	School with student population falling between HIGH AND MIDDLE Groups.
C.	MIDDLE	School in which the majority of the students come from middle class families such as the government employees, teachers, patty business man etc.
D.	LOW MIDDLE	School with student population falling between MIDDLE AND LOW Groups.
E.	LOW	Majority of the student come from the poorer sections of the society, such as peons, industrial labourer, daily wages earner, etc. (Family income may be below hundred rupees).

*Groups A and B were combined to form High SES Schools; C and D to form Middle SES and the Group E remained as Low SES.

CHAPTER I

INTRODUCTION

This is Part II of our Research project on Achievement Motive in High School Boys and Training for it. This concerns with the Achievement motivation training and its impact on pupil performance. The present study saught to test the effect of two motivation training programmes - one designed to increase the concern to achieve and another designed to boost aspirations in high school boys - on academic performance. The content of the Achievement motivation training programmes derives from researches on Achievement motivation by McClelland and associates (McClelland et al,1953; Atkinson, 1958; (McClelland, 1961) and our own research reported earlier in study one. The content of the second programme derives from research on: teachers' influence on pupil aspirations and performance Zander et al, 1961); effects of teacher comments on pupil performance (Page, 1958; 1963) and pupil expectations and their actual performance (Goldstein, 1962; Orne, 1962; Rosenthal, 1963).

Attempts to increase the concern to achieve through a counselling programme (Burris, 1961) and by a training camp (Kolb, 1965) were found to enhance the students academic performance. The present study used teachers, trained in programmes designed to increase their concern to achieve as agents of similarly designed changes in their pupils. The programme designed for pupils (IX class boys in science group) were carried out in specified manner in the respective classrooms by the teachers who were trained earlier for this purpose. The experimenters had little direct contact with the Ss. The former operated in classrooms through teachers. The study, therefore, tested the effects of the classrooms programmes/designed to enhance concern for achievement and boost aspirations and which were carried out by regular teachers.

Procedure

Setting

Once science section in class IX of each of eight higher secondary schools (of which one was later dropped) at Jaipur were chosen for the experiment. The Director of Education, Rajasthan assured all help in carrying out the programmes. Eleven teachers from three experimental schools attended a 10-day residential course in Achievement Motivation Training (AMT) at Ajmer. The course was designed and conducted following the propositions and activities proposed by McClelland (1965). Fourteen teachers from four experimental schools, of which seven from two experimental schools had earlier attended the AMT, attended a two-day Aspirations Boosting Training (ABT). Some details of the training courses are given in Chapter 2.

Experimental Design

Five (E2, E3, E4, E5, E6) schools worked as experimental and two were retained as controls schools (C1, C2). Boys in E2 were taught A Brief Course in Achievement Motivation by their teachers trained for it (TI). The boys in E5 and E6 received a programme designed to boost their expectations (T2) by their teachers who were trained for this task. Boys in E3 and E4 got both, T1 and T2 from their teachers who had received both, the AMI and ABT. The treatments ran from November 1965 through February 1966. The experimental design is presented in Chart 1.

Subjects

The schools were selected on the basis of their results at the Higher Secondary School Examination. They were all average achieving schools. The concerned inspector of schools also rated the selected schools as average achieving. Two of the experimental and one of the control schools were government schools and the rest private aided schools. All the schools followed the curriculum prescribed by the Board of Secondary Education and were governed by the same rules and regulations. There were in all 290 Ss (all IX class boys in science group), 40 from E2; 71 from E3 and E4; 93 from E5 and E6; and 86 from control schools (C1 and C2). The Ss showed a mean score of 39.30, with median at 39.40 and S.D. of 6.29, on a group test of verbal intelligence (Mehta, 1962). E2, E3, E5, E6 and C2 were comparable on intelligence. These schools showed higher intelligence scores than E4 and C1 ($F=2.45$; $P<.05$) which were comparable with each other.

Classroom Experimental Programme

The Brief Course in Achievement Motivation formed the experimental treatment 1 (T_1). It consisted of eleven items spread over four months. Four class periods were set apart in regular weekly time-table for this course. Regular instructional material was supplied to the teachers to carry out this programme. The project staff paid regular visits to Jaipur to supervise and help teachers in carrying out the programme. Treatment 2 (T2) consisted of four classroom tests given by the respective subject teachers, one each month in Physics, Chemistry, Mathematics, Hindi and English. The Ss set a goal for themselves after each test. They were also given feedback on psychological and achievement tests which were given before the treatment started. A summary of the instructional material is given in Chapters3.

The Ss were tested in the following manner:

1. Pre-tests: A test of insight consisting of six TAT type pictures; verbal group test of intelligence and achievement tests in Chemistry, Mathematics and Physics were given in the second week of October, 1965. The achievement tests were semi-standardisezed by the Department of Evaluation and Examination of the National Council of Educational Research and Training for the Board of Secondary Education, Rajasthan.
2. Post-tests: The test of insight and achievement tests in Physics, Chemistry and Mathematics were again given in the last week of February 1966.

The above tests were given in the order they are listed to all Ss in experimental and control schools. Besides, data were collected on social class in the beginning of the programme. The marks obtained by the Ss at their respective school annual examinations (April, 1966) were collected and used for follow up analyses.

Hypotheses Tested in Experiment

The experimental treatments were administered to the concerned classes with specific objectives mentioned in Chapter 3, It was hoped that the attainment of these objectives would have impact on pupils behaviour as well as on their academic performance. The following specific hypotheses were tested in the Experiment.

Experimental Desing for Training of Achievement Motive in Secondary School Teachers and Boys

Class of Boys N = 45 each	Measure	Treatment 1 (T1 and T2 would be con-current)	Treatment 2	[illegible]t 2 measure
1	2	3	4	5
Contro (C1 and C2	n Ach and Achievement Tests	X	X	Same as in Col.2
E1 and E2	n Ach and Achievement Tests	Boys work with teachers trained in coding their own stories for n Ach.	X	Same as in Col.2
E3 and E4	n Ach and Achievement Tests	Same as E1 and E2	Boys receive a designed programme from teachers who have been trained for it	Same as in Col.2
E5 and E6	n Ach and Achievement Tests	X	Same as E3 and E4	Same as in Col.2

Hypotheses

1.1 The boys in E2 (recipients of T1) would show greater academic performance (at the end of the programme and later) than boys in control schools.

1.2 The boys in E2 would show greater academic performance than those in school E5 and E6 (at the end of the programme and later).

2.1 The boys in E5 and E6 would show greater academic performance than those in control schools.

3.1 The boys in E3 and E4 (recipients of both T1 and T2) would show greater academic performance than those in Control schools.

3.2 The boys in E3 and E4 would show greater academic performance than those in E2.

3.3 The boys in E3 and E4 would show greater academic performance than those in E5 and E6.

Results

The very nature of the experiment placed certain limitations on the study. The schools did not cover the same amount of curriculum during the period of experimentation. The teachers, inspite of the training, had their natural differences. The post treatment achievement tests were therefore not likely to show strictly comparable results. The boys came from varying home backgrounds; such differences and limitations were likely to affect the pupils' school performance. The pre-treatment tests were given in October, 1965, the post-tests in the last week of February, 1966. The school annual examinations were held in the last week of April, 1966. The relevant results of analyses of marks obtained at the above tests are reported and discussed in Chapter 4.

CHAPTER 2

MOTIVATION TRAINING [1]

The training course design followed the general design of total experimental programme as described in Chapter 1. Three experimental treatments were given to five groups of IX class boys. The concerned teachers were trained in two groups in two different courses, one on Achievement Motivation, and another on Aspiration Boosting.

Objective of the Training Course

It was a ten-day course planned for a small group of selected secondary school teachers. The following were the general objectives of this course:

i) To raise their (teacher's) level of n Ach in each of the components on n Ach particularly the sub-categories with negative tone.

ii) To train teachers with a view to help them create a climate of warmth and support in their classrooms.

iii) To raise their 'hope of success' in various school programmes.

Selection of Schools and Teachers

Seven comparable secondary school were involved in the experiments, five as experimentals and two as controls. Out of the experimental schools, three received experimental programme on Achievement Motivation. The teachers of Physics, Chemistry, Mathematics, English and Hindi, teaching the selected section of Class IX attended a 10-day training course.

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[1] A full report on Motivation Training for Educational Development is obtainable from the Department of Psychological Foundations, N.C.E.R.T.

The Local Sponsorship

The Department of Education, Rajasthan, agreed to sponsor the experiments as their own. The Director of Education, sent around a detailed circular to the selected schools. The Department requested the teachers and the principals of the selected schools to meet the research staff. Some officials of the Department, including the Director and the Additional Director, also participated in the meeting. Details of the training courses and the experimental programme were explained to them. The meeting enabled the faculty to establish the first personal contact with the educators who were to become their partners in this cooperative research on motivation training.

The programme was formally inaugurated by the State Education Minister, at Jaipur, on October 7,1965. The function was largely attended by teachers, principals and the officials of the Department of Education. In a brief speech the Minister welcomed the idea of experiments on motivation training at Jaipur. He assured all cooperation for such experiments.

The above meetings were organized to promote readiness in teachers and others for the training course and the school experimental programme. These meetings helped in creating an atmosphere of prestige and urgency for the programme.

The Course

The Location

The Course was held at the Tikam Chand Jain Higher Secondary School, Ajmer, from October 14 to 23, 1965. The trainees stayed at the Lodha Dharamshala just in front of the school which provided good physical facilities. The trainees were taken out of Jaipur to enable them to devote all their time and attention to the items of the Course. The course was inaugurated by the Director of Education, Rajasthan, who told the trainees that they were to undergo a rather usual course, the first of its kind in the country.

Trainees Perception of the Course

The pre-training activities helped the trainees to perceive the Course clearly. This was revealed in their essays on 'Why Am I Here' written by them in the first session of the Course.

Who Am I

Immediately after the inauguration, the trainees took the test of insight (Pictures B4, D4, A5, A3, C2 and B2 displayed in Mehta, 1966) and wrote essays on "Who Am I' and 'Why Am I Here'. These instruments set the tone for the Course. They began to realize that the programme of the Course was different from some other courses they had earlier attended. On the following day they were told about the research project on achievement motivation at the NCERT and about the role of the training course in the total programme. They were further told about some such research activities in other countries. The trainees then started a session on 'Who Am I'. This was initiated by one faculty member. In the beginning they were at a loss to say about themselves openly. Initially they resisted, saying that, they had already written out their essays on 'Who Am I'. As one or two persons spoke, a general warming was seen. The session then lasted for about four hours in which everybody including the faculty spoke on who were they. The programme aimed at enabling the participants to think about themselves. This was considered essential for self-development. This programme further brought home to the participants the difference between the present training course and some other courses which they might have attended earlier.

On the third day some time was devoted to discussing the relationship between values and motives and the social origin of achievement motivation. The trainees role played the following game in family situation and observed how parents tend to discourage or encourage their children in their activities. A Psychologist, a child of 14 years, a father and a mother made up these roles.

> A Psychologist visits a home to test intelligence of the child with the help of some blocks. He tells the parents that the child is required to put block one over the other, blind folded. He further tells them that children of their sons' age, on an average can put 9 blocks. He then asks them to set a goal (number of blocks) for their child. The child tries the game during which the parents are allowed to talk to him without actually helping him. The child might fail, achieve or surpass the goal set by them for him. He plays it three times.

The rest of the group was observing the behaviour of the parents and the child. Their observations are later discussed. They asked questions to the role players.

The relevant observations were related, by the instructor, to some of our cultural values. The participants' attention was drawn to the pre-dominant role of punishment both in our homes and families in dealing with children.

Practice in Coding Stories

After preliminary discussion, the group moved on to learn the method of scoring stories for achievement motive. The criteria for coding achievement imagery and the various subcategories (McClelland et al, 1953) were throughly learnt point by point. They then scored two sets of stories. After coding practice stories, they scored their own stories which they wrote on the first day of the training course.

Educational Games

The following two educational games were played individually by each participant. These were used to teach them the concept of risk taking and its relation with need Achievement.

Risk Taking Game I

Alexander's pass along test of intelligence was converted into a risk-taking game by asking the subject to select that card which he would like to try in the first instance. Four trials were given. At the end of each trial, he was asked to state which card he would like to try next. The following instructions were used for this game.

> "Here are 9 cards which are arranged in order of their difficulty. Card No. 1 is rather simple and Card No.9 is quite difficult. I would work with Card No1 to demonstrate the procedure to play this game" (Card No. 1 is

then done before the subject).

"You will be given four trials. The score in each trial is the number of the card you work with i.e., the score for Card No 1 is 1 and 2 for Card No. 2 and so on. You get the given score only if you can make the given pattern within allotted time. Your score will be the total of four sub-scores in four trials. Now tell me which card you would like to try for the first trial."

Risk Taking Game II

A target hitting toy was used as the second game with the following instructions:

"This is a target hitting game. There are eight pins and a target field. As you see the inner circle of this target field carries more points and the outer circle less points. Within these areas each target is assigned a separate score point. You will be given three trials to play the game. For each trial you have to tell me how many of the eight pins you hope would hit the target field and how many points you hope to score. Your total score will be the aggregate of the points obtained by you in all the three trials."

Classroom Inter-action

Sometime towards the middle of the training course, the group heard and discussed some points relating to dynamics of classroom groups. They learnt the Flanders' (1960) inter-action categories and the method of observing and recording classroom behaviour with the help of several brief role plays and a tape-recorded classroom lesson.

Sensitivity Session

Some-where in the middle of the training course half a day was devoted to a sensitivity session. The session proved useful in further 'opening up' the participants. They took it up as a continuation of Who Am I.

More About n Ach

Towards the close of the training course the participants heard and discussed characteristics found in persons with high n Ach. They then tried to relate these characteristics to success in their profession.

The Test of Insight Again and Some More Instruments

The participants once again wrote stories in response to the TAT type pictures. Here they tried to deliberately create as many sub-categories as they could in their stories. The scores obtained by the participants in the first and the second test of insight (i.e., on stories written in response to TAT type pictures) are summarised in Table 1 and details are shown in Appendix I. As was expected, each one of them improved his scores.

Achievement Plans and Goal Inventory

The participants filled out questionnaires pertaining to achievement plans, and significant life experiences and life goals. These were used as training devices to stimulate them to think about their interests and ambitions and to promote in them some commitment to goals. Some participants initially resisted these inventories, thinking that these resembled their service confidential reports. But as these were discussed point by point in the classroom, and individually, they begain to understand. It was recalled later in the evaluation that each one of them found the inventories very useful.

The School Programme

Half a day was devoted to discussing school experimental programme which the trainees had to carry out after training. The participants suggested several things by way of practical implementation of the programme.

There was a film show every evening and some in the afternoon during the Course. Frequent discussions took place on these films during items of the Course.

Evaluation

The participants continuously evaluated the Course. Each days' activities were evaluated, at the end of the day on a proforma. The responses were used to be analysed by trainees themselves. The evaluation and suggestions were feedback. The programme actually started each day with this kind of feedback from the previous day. Necessary adjustments were made in the programme on the bais of the feedback. The day to day evaluation is shown in Figures 1 to 5.

The End of the Course Evaluation

Half a day was devoted to an open ended evaluation on the last day. Every-body spoke about the Course. These were tape-recorded.

Valedictory Function

The valedictory function was presided over by the Chairman, Board of Secondary Education, Rajasthan. He gave various Sanskrit 'Slokas' to show how pursuit of excellence was prised in ancient India.

Aspirations Boosting Programme

The two-day Aspiration Boosting training was attended by fourteen teachers from four experimental schools (E3, E4, and E6). Seven of the 14 teachers, had earlier attended the 10-day course. For them it was a continuation of the previous training.

Focus of the Course

The course centered round three ideas and the practical manipulation of these ideas in classrooms. There were: socio-educational norms; aspirations and the feedback process. The overall objective of the training course was to enable teachers to use some of these ideas in a organized and standardized way in order to boost academic achievement in their pupils in the respective selected sections of class IX. Most of the time, therefore, was devoted to discussing the various implications of the above ideas for academic achievement. The trainees received four brief papers concerning the above ideas by way of training material. These papers were read in a advance as well as during the course and briefly discussed. The attention of the trainees was particularly drawn to the relevant portion of these papers which deal with academic achievement in classrooms.

The Teachers Resistence

As is usual with teachers, soon after the first session in which the general plan of the training as well as the programme to follow in schools, was explained, the participants began to raise doubts, in the form of practical difficulties. Many of these points are well known which tend to be repeated at most of our workshops and training

TABLE I

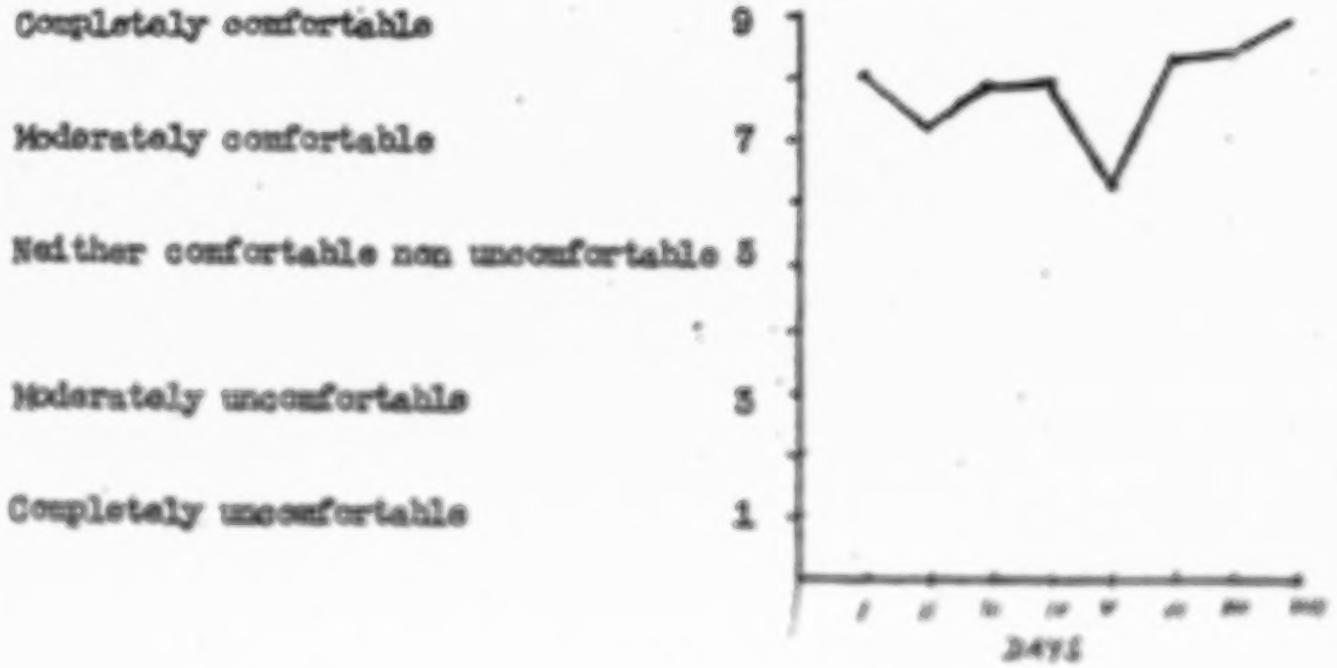
n Ach SCORES OF TEACHERS BEFORE AND AFTER THE MOTIVATION TRAINING PROGRAMME AT JAIPUR

	n Ach Characteristics													
	UI	TI	AI	N	I	Ga+	Ga-	Bp	Bw	Nup	G+	G-	Th	Score
Before	1.44	2.88	1.62	1.08	1.44	0.27	0.0	0.0	0.09	0.09	0.00	0.00	1.17	4.32
After	0.00	0.09	4.58	4.68	5.22	1.98	0.0	0.9	0.81	1.62	4.59	0.27	5.04	30.78
Change	-1.44	-2.79	2.84	3.60	3.78	1.71	0.0	0.9	0.72	1.53	4.59	0.27	3.87	26.46

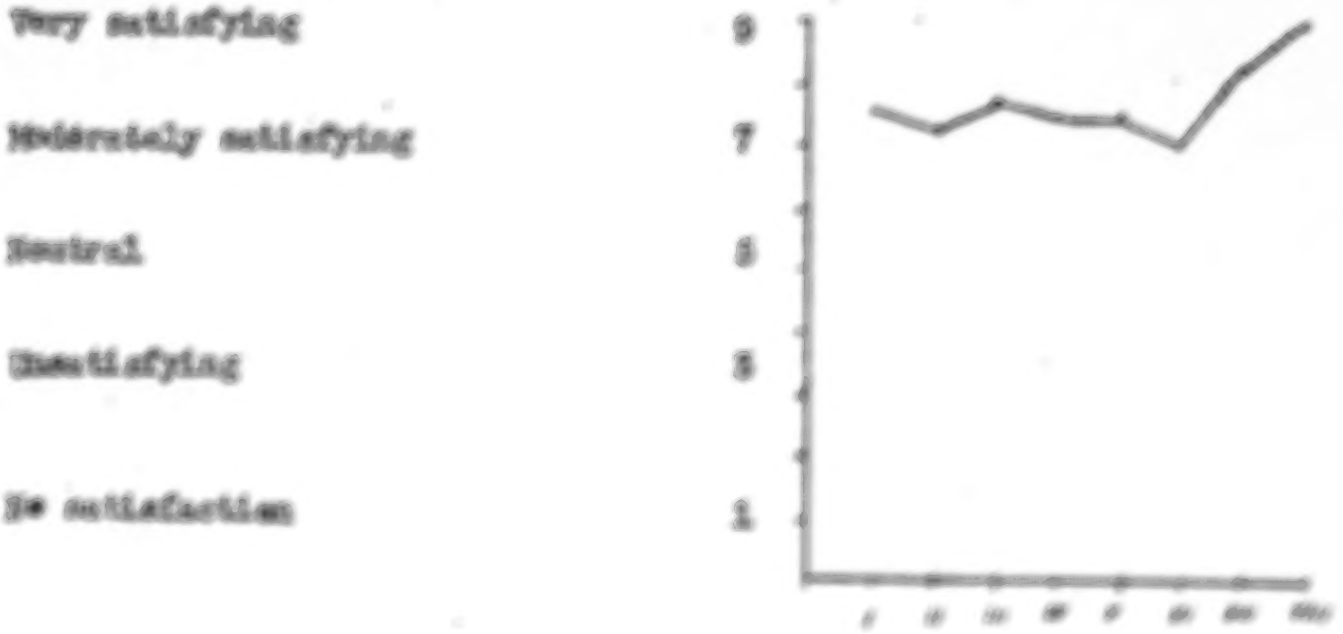
* The Scores obtained by each participant are shown in Appendix Table I

SELF EVALUATION BY PARTICIPANTS

I How did the participants feel in the group?

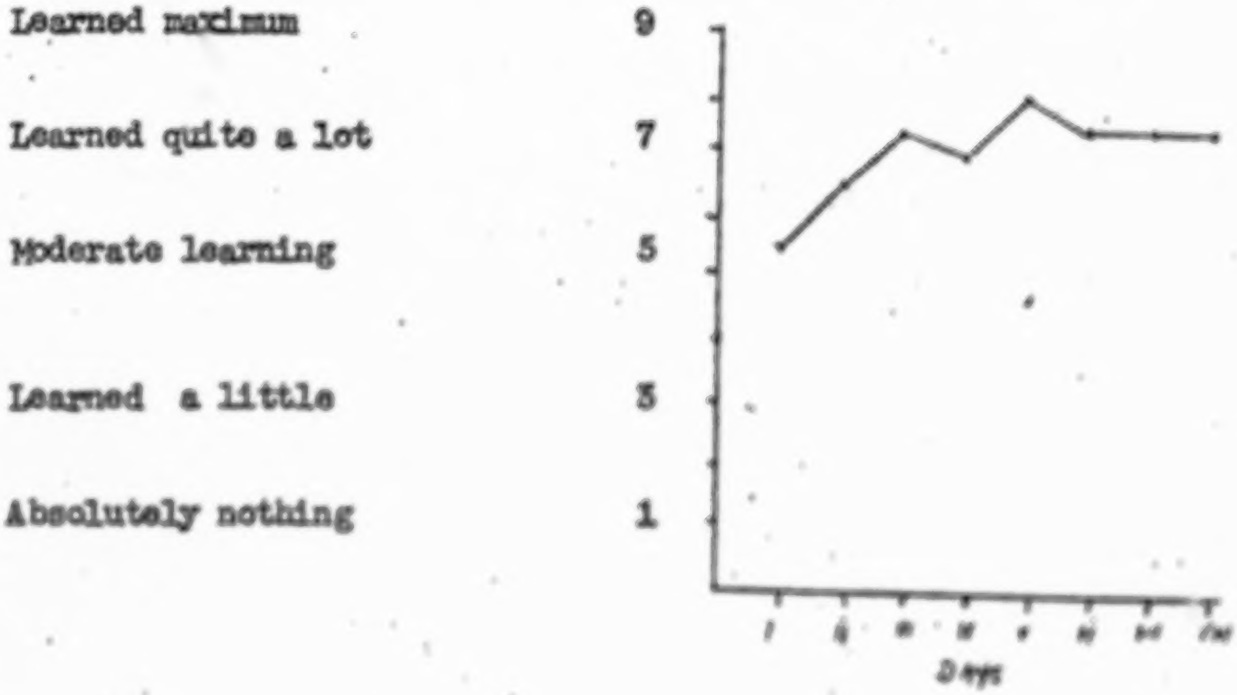


II How was the participants participation in the group?



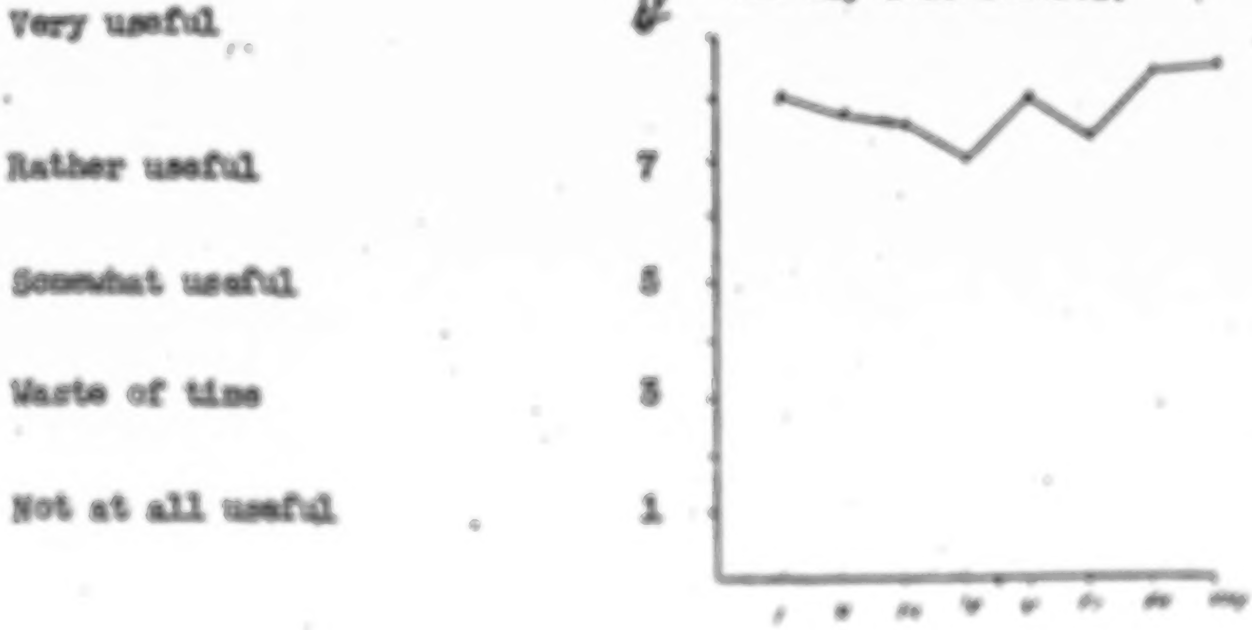
III

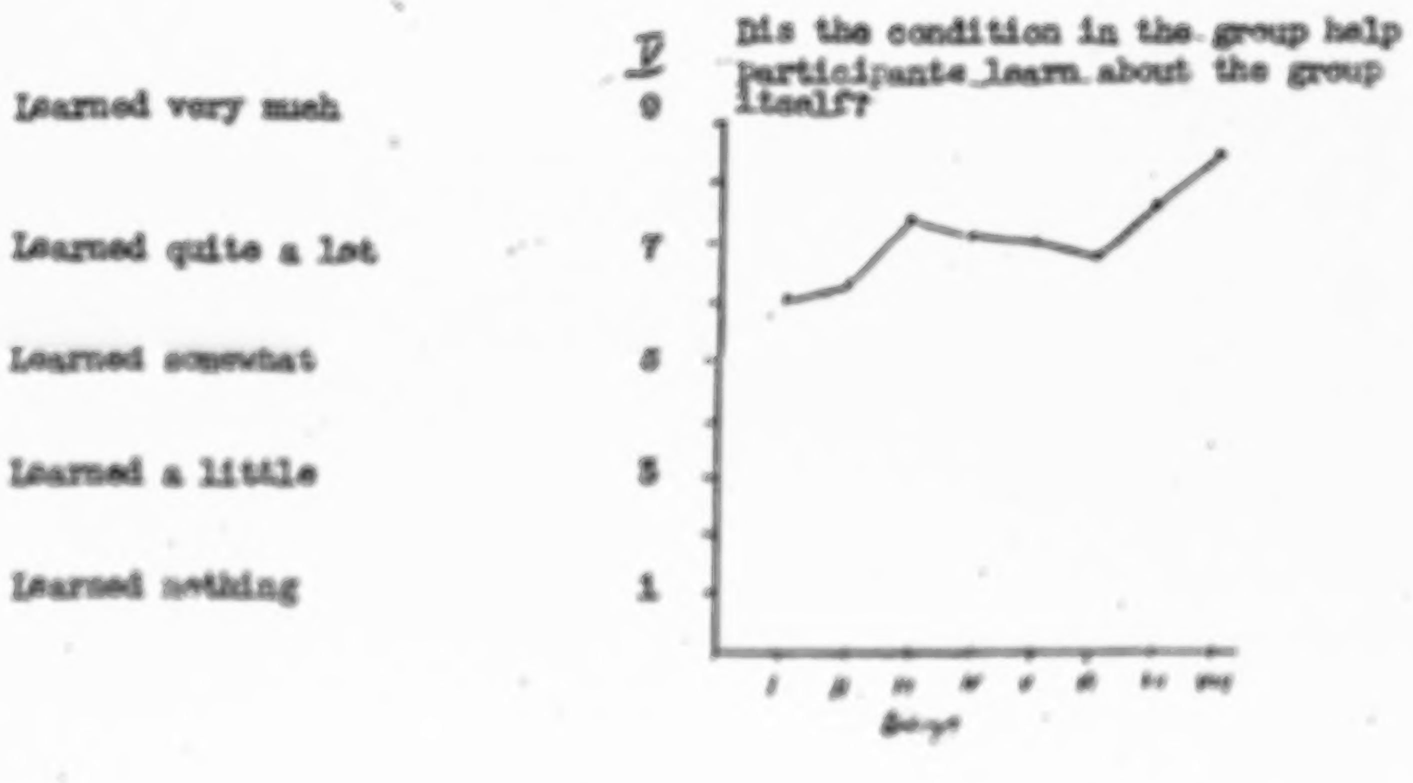
How much participants thought they had learnt?



IV

How useful participants considered the day's activities?





Dis the condition in the group help participants learn about the group itself?

course for teachers. The second session therefore was devoted to a kind of open ended discussion on whether or not reachers can help their pupils to better their academic achievement as compared to what they achieved at present. All teachers participated in this discussion which turned out to be very lively and interesting. The teachers got a chance to express some of their aggression against the system of education and various difficulties they have to face, both academic and economic. The atmosphere seemed much improved after this discussion.

Teachers Involvement

During this discussion several teachers provided excellent material for introducing the relevant topic for the training course. A part of the next session was, therefore devoted to explaining the various learning experiences which the teachers could provide their pupils. These experiences could be given, as was pointed out by teachers themselves irrespective of the present practical and economic difficulties. The teachers for example, gave instances where with little attention and opportunity pupils could succeed in the areas of their interest, which in turn motivated them to put in better work leading to better performance in other academic areas as well. Some teachers talked of gangs and small groups of students and pointed out how these groups pull down the academic achievement of even those pupils who really wish to work better.

The teachers pointed out the general backwardness of parents and their apathy as well as their resistance to whatever school does or wants parents to do. The points like these were then discussed in the groups once more. At this stage, the teachers started suggesting that the training group should talk more of practical things. One of them suggested that the groups may be divided into small groups to discuss how these problems could be tackled in classrooms. This was the right time for distributing the programme drawn for experimental work in respective classes in this connection. The programme was discussed after the trainees had seen some papers relevant to the points they had raised earlier. The second day of the course was devoted to discussing and finalising the programme of aspiration boosting in the experimental classes. This was well received by the group. The programme was discussed in details. The groups then finalised various practical details for the implementation of the programme.

The Programme

The last session was devoted to school-wise discussion on the programme. The participants, working in small groups, suggested various practical things to be borne in mind with regard to their schools for the implementation of the programme. These mostly related to time-table adjustment and time needed for carrying out the programme. A summary of earlier discussions and decisions was presented in the last general meeting. The tentative programme of classroom work, which was approved by teachers is shown in Appendix II.

CHAPTER 9

A BRIEF COURSE IN ACHIEVEMENT MOTIVATION

As a part of our experimental programme of Motivation Training for Educational Development at Jaipur, A Brief Course in Achievement Motivation was taught to the selected class IX boys in three higher secondary schools. The courses were taught by teachers of respective schools who were earlier trained for this purpose for four months from November 1965 to February 1966. The Course was geared to the level of teachers and through them to the level of IX class pupils. Efforts were made to make the Course both interesting and instructive. The following methods were adopted in this connection:

a) The teachers were continuously supplied with instructional material to enable them to teach the desired Course in their respective class-rooms. The instructional kit contained booklets, games, exercises, questionnaires, inventories and scoring material.

b) As stated above, four class periods were devoted each week to this Course. The teachers devoted a total of about 64 class periods to this programme. Several teachers co-operated in carrying out the programme. They divided the work among themselves. One teacher worked as the co-ordinator of the programme in each school. He was mainly responsible for carrying out the programme. The principal were continuously kept informed about the progress of the programme.

c) A series of posters were supplied to teachers to aid teaching of the language of achievement motivation. These posters were appropriately displayed in the respective classrooms.

d) The project staff paid about 20 visits to Jaipur and spent a total of about 96 days, helping and supervising the work, in an endeavour to keep the programme standardised in all schools.

e) A mid-review-meeting was called in the middle of January 1966. The principals and teachers of the concerned schools, the officials of the Department of Education and the project staff participated in the meeting. The teachers reported on their progress. They made several suggestions in order to help themselves in carrying out the programme in the desired way.

Specific Objectives of the Course.

The overall objective of the entire experimental programme was to raise the level of n Ach both in teachers and in their pupils. The emphasis was on developing hope of success in teachers and their pupils. It was hoped that the activities designed to achieve the above objectives would lead to better academic achievement in pupils. These broad objective were specified as follows:

The Course sought:

a) to develop a desire to work toward some standard of performance which may be either a self-imposed or an external one;

b) to develop 'goal directedness' in pupils. Behaviorally, it would seek to develop thinking about achievement and vocational goals;

c) to develop appreciation of the fact that attainment of achievement goals is not an easy one. Achiever has to face difficulties from the outside world, personal shortcomings and failures. It needs consistent efforts;

d) to promote thinking about and to try to strengthen the following characteristics in pupils: i) Sense of responsibility: owning responsibility for decisions and for their own performance.(ii) Carefulness in Planning and doing study activities. (iii) Intelligent use of time: understanding the value of time (iv) Regular work habits. (v) Willingness to undertake new activities, readiness to accept feedback on ones own performance, willingness to know and discuss performance, willingness to know and discuss performance with teachers, peers and others.

e) to familiarise the pupils with the language of n Ach and perpare them to use this language.

f) to encourage them to ask questions and feel free to raise doubt in classrooms.

A Brief Descriptions of the Course.

Each outline of the topic contained specific instructions to the teacher and the taught for work to be carried out. The instructional kit in Hindi[2] is available separately. The following gives a very brief summary of the main points contained in each outline. The items in the programme were carried out in the sequence shown in Table 2. The time devoted to each of the items in also shown in the table.

TABLE 2

ITEMS OF THE COURSE WITH TIME DAVOTED TO EACH

ITEMS	Class Periods Devoted
1. Who Am I and Why Am I Here	4
2. Characteristics of a successful person	4
3. Life goals	5
4. Thoughts of success	5
5. The scoring technique: A brief manual for scoring Achievement Imagery.	16
6. Creativity.	3
7. A short play on achievement related them	4
8. A short folk tale	5
9. A short biography of Dr. Jagdish Chandra Basu	5
10. Achievement plan inventory	4
11. Concluding session	3

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[2] The original instructional kit in Hindi is obtainable from the Department of Psychological Foundations, NCERT.

1. 'Who Am I' 'Why Am I Here'

The programme started with this exercise. Pupils spoke about themselves and on reasons for their being in school. One faculty members and the concerned teachers were present during this exercise. The item aimed at opening up the boys and involving them in the work to follow later. The teacher incharge of the programme explained the objectives and nature of this new activity. Boys later wrote essays on 'Who Am I' and 'Why Am I Here.'

2. Characteristics of a Successful Person.

The item which followed 'Who Am I' and 'Why Am I Here' sought to stimulate thoughts of success in pupils. It focused on four qualities: (i) sense of responsibility; (ii) ability to take quick decisions; (iii) exchange of ideas with others regarding ones own success or failure; and (iv) full and proper use of time. One hour was devoted to each of these four qualities. Sense of Responsibilities: The teacher introduced the the topic in a general way emphasising the importance of hard work in attaining success. He then posed two questions: "What do we mean by sense of responsibility?" and (ii) "Name some such persons from our contemporary life who have shown a great sense of responsibility under difficult conditions." A practical problem connected with a scouting camp was then proposed. The class discussed the various task and responsibilities needed to successfully conduct the camp. The boys actually opted for various responsibilities. One teacher summed up by calling attention to the importance of team work in carrying out the responsibility for success of any such work.

Quick Decisions: The teacher again introduced this in a general way saying that successful person show remarkable quality of taking right decisions quickly and in time. He invited the pupils to discuss the problem of food production and suggest ways to improve the situation. (The country was then passing through a difficult food situation and the leaders and press were calling upon people to grow food wherever they could). The teacher emphasised that if they succeed in implementing their suggestions the credit should go to them. In case they fail, they should be prepared to own their responsibility.

Exchange of ideas with others: Exchange of ideas on one's performance

The teacher here explained the meaning of this quality by giving suitable examples. He tried to explain the meaning of 'Feedback'. He then prepared the class to do a brief role play. He briefed three boys for the content of the role play. These three boys then talked to one another for about four minutes. The rest of the boys observed them. The class then discussed as to who talked in what way and what they felt when the role play was going on. They also gave their reactions about the behaviour and way of talking of each person in the role play. The teacher, at the end, explained, that they were giving feedback to one another. He further drew attention of the class by saying that getting and ~~and~~ giving feedback on one's own behaviour is an important quality of a successful person.

Proper Use of Time: This item mainly contained a practical exercise. The teacher held up a watch and told the class to observe him. He then asked the class to tell him the duration of time passed. He did so five times giving different time intervals. Each time the pupils tried to estimate the time interval and wrote it on their note-books. Later, the teacher drew their attention to the fact that even half a minute was a long time. He then told them that successful persons try to use their time fully and properly.

The teacher summarised all the four items and the work pupils did under each. He told them that psychologists have been trying to find out the motives of successful persons. Why they behave the way they behave? What is the source of their activities? He left them to ponder over these questions saying that those would be taken up later in the programme.

3. Life Goals

This item sought to explain the importance of life goals and to stimulate pupils to try to set some goals for themselves in various fields. The overall purpose was to gradually help pupils to set achievement goals. This programme was divided in two parts. A brief discussion on the meaning and importance of life goals and instructions for taking the life goal inventory. Secondly, the boys took home the life goal inventory and brought it back the next day. Their responses were discussed briefly, after which boys were divided into small groups in which they discussed their life goals.

4. Thoughts of Success.

This item sought to stimulate and promote thoughts of success in pupils. It tried to strengthen their desire to succeed and to create readiness in them to undertake work for their goals. Discussions; questions and answers; small group work; essay writing and brief mental exercises formed methods of work. These activities were divided into four parts of one hour each. The teacher started by recalling the various qualities of a successful person. He then introduced the exercise, asking them to recall some successful events from their life. He distributed papers to enable boys to write about this in about 15 minutes. He went round the class encouraging pupils to write. He then collected the papers, picked up some and read the descriptions anonymously. As he read them, he recorded significant points on the black-board. He then tried to emphasise the importance of the desire to succeed. Later he helped pupils to think about the life and work of Jawahar Lal Nehru. The various qualities and significant events were discussed in about five to seven minutes. He then distributed papers asking the pupils to write a brief essay on the important qualities of Jawahar Lal Nehru. The boys were then divided in small groups of five to six each. They exchanged their essays with one another, discussed them and one of them then recorded the common points and prepared a summary of what they thought were the main qualities. These summaries were then discussed in the entire class. The teacher summed up by saying that for success, qualities like goal setting, sacrifice self-confidence, hard work, and a keen desire to succeed are needed.

Some puzzles were given in the next exercise. These were printed on sheets distributed to each boy. These were on quick wit and proper thinking. The teacher summarised the various activities done under this item. He gave examples from the essays and significant events written by the boys to illustrate the point that thoughts of success are necessary for real success. Such persons, who think they would succeed and who work to get this success, are more likely to succeed.

5. The Scoring Technique: A Brief Manual for Scoring Achievement Imagery(Scoring of Achievement Related Stories).

The item sought to teach the preliminaries for scoring achievement related stories and to teach the language of achievement motivation. The teacher started the topic by recalling qualities of a successful person, importance of thoughts of success and success imagination. He introduced here the term achievement motivation saying that the motive to achieve is really important for success. The item was divided into four parts each covered in two hours (4 school periods). Part I dealt with the categories and sub-categories of achievement motive. The criteria for coding achievement imagery were explained here. The teacher told a story and then asked various questions about the story. The answers were recorded on the board. He raised some questions also. Those questions and answers enabled the class to go to the sub-categories. All the 10 sub-categories, namely, Need; Instrumental activity; Goal Anticipation (Positive and negative); Blocks from outside and within; Help; Affect(positive and negative) and Achievement Theme;

were introduced and explained at this stage. The next day the teacher recalled the previous day's work He told them that one way to know about the achievement motive of a person is to ask him to write stories in response to pictures. These stories then can be scored. He told them that certain objective principles have been developed to decide whether a given story contains achievement imagery or not. He gave examples to illustrate the four criteria of coding achievement imagery. He then asked the students to give examples to illustrate each of the criteria of coding achievement imagery. He asked them to give examples to illustrate each of the criteria. Various examples were developed in the class. A set of stories was distributed. The boys tried to pick up those sentences of stories, which showed any one of the criteria of the achievement imagery. Next time, after the teacher had given the summary of the criteria of achievement imagery and various sub-categories, he asked the boys to write stories of their own, so as to include as many categories as possible. Some of these stories were then discussed inviting the pupils to support their scoring. A set of stories was distributed alongwith a scoring sheet. The boys scored some of these stories in the class. They carried the rest home for further scoring. The stories written by boys earlier in response to TAT pictures were distributed during the next period. The pupils scored their own stories in the class. Another set of 10 stories was given to them for practice scoring.

6. Creativity

This item sought to explain the meaning of creativity and to stimulate boys to be creative. Two questionnaires were distributed - one contained some unclosed lines. The boys were required to make figures with the help of those lines on the set. The other contained certain verbal puzzles.

7. A Short Play on Achievement Related Theme

The play sought to recall the achievement related qualities and categories and sub-categories of achievement related motivation. The item was divided into two parts. In Part I the boys prepared for the play. Under Part II the selected boys presented the play. Each pupil was later required to answer a few questions.

8. A Short Folk Tale

This item sought to further clarify doubt regarding the achievement language. A memiographed story was given to each boy. They were also given scoring material and a story analysis questionnaire. They wrote stories and later answered questions.

9. A Short Biography of Jagdish Chandra Basu

This item also sought to strengthen the drilling of achievement language. The boys read the biographical sketch and answered specific questions. They also scored stories in a regular way and answered related questions.

10. Achievement Plan Inventory

The questionnaire sought to further enable the boys to think in terms of achievement behaviour. The eight items listed on the questionnaire sought to direct their thinking, along goals and various categories and sub-categories of achievement related behaviour.

11. The Concluding Session

The concluding session summarized all the activities done during the programme and stimulated boys to think further in terms of achievement goals and achievement related behaviour. The teacher summarized point by point all the previous items. The boys and certain teachers unassociated with the programme gave their impressions about the programme.

Treatment II: Aspirations Boosting Programme

Teacher Training

Some teachers from four schools were trained in a two-day programme to carry out the treatment on aspirations boosting. The Training Programme is reported in Chapter 2. The teachers thus trained carried out Treatment 2 (T2) in their respective schools. It should be recalled here that teachers from two of the three schools who attended the 10-day course, also attended this two-day course. These teachers gave both the treatments in their classrooms.

Objectives of Treatment II

The aspirations boosting programme sought to:

a) raise the level of academic aspirations in pupils;

b) raise the level of self image of their abilities; and

c) create a sense of goal committedness in them.

Activities

i) Feedback on Psychological and Achievement Tests. Each pupil was given a letter containing his results on psychological and achievement tests. These letters sought in general to help pupils perceive themselves as having good abilities and intelligence. The pupils carried these statements home for perusal of their parents.

ii) Goal Setting on Classroom Tests. Four classrooms tests, one each month, in English, Hindi, Physics, Chemistry and Mathematics were given to the selected sections. These tests, which were objective cum short essay type were set by the respective classroom subject teachers. The results of the tests were fed back to pupils alongwith descriptive evaluation of each obtained results.

	Comments
1. Excellent:	maintain this performance
2. Very good:	continue to try
3. Good:	need a little more work
4. Fairly good:	we should try to get better results
5. Fair:	We should try to raise our present standard.

After each feedback the pupils set a goal for themselves on a specified proforma for the next test. Each time after the first test, the pupil thus had before them the score they obtained in the previous test (s) and the goal they set for the forthcoming test. Each goal therefore was set on the basis of the knowledge of their performance. This was done for all the five subjectis (namely, Hindi, Mathematics, English, Physics, and Chemistry). The goal setting proforma can be seen in Appendix III.

CHAPTER 4

n ACHIEVEMENT AND PERFORMANCE IN EXPERIMENTAL AND CONTROL SCHOOLS

The experiment involved one section of class IX boys in seven higher secondary schools, out of which five received some experimental treatment for about four months. As reported in Chapter 1, the experimental schools were E2,E3,E4,E5, and E6. There wer two control schools - C1 and C2. All the concerned boys in seven schools were given achievement tests in Physics, Chemistry and Mathematics. In October 1965 (pre-test) and in February-March,1966 (post-test). The thematic apperceptive measure of n Achievement was also given as a pre-test and post-test. The April,school annual examination served as the second post-test. Thus, one set of change scores in n Achievement and two sets of change scores in Physics, Chemistry and Mathematics were obtained for those Ss who were present both at the pre-test and the subsequent post-tests. The specific hypotheses regarding change in school performance,mentioned in Chapter 1, some hypotheses regarding change in n Achievement and some regarding change in school performance of bright under-achievers described below, were tested in the experiment.

Change in n Achievement

Implied Hypotheses

The Brief Course in Achievement Motivation, was taught with specific objectives, as reported in Chapter 3. The aspiration boosting programme, similarly, had specific objectives. The implied hypotheses were that, the change in n[3] Achievement shall be greated in:(1) boys of E2 than those in E5-E6 and C1-C2; (ii) boys in E5-E6 than those in C1-C2 (the aspiration boosting programme was assumed to have aroused n Achievement); (iii) boys of E3-E4 than those in the E2: E5-E6 and C1-C2.

Change in n Achievement: Results

The boys in E3-E4 showed greated change in n Achievement, as predicted, than those in other schools (all $P < .005$ or less). The boys in E2 also confirmed the hypothesis by showing greater change in n Achievement than those in E5-E6 and C1-C2. The means and S.Ds at pre and post test of n Achievement are shown in Appendix Table2. Contrary to prediction the boys in E5-E6 and C1-C2 showed no difference in change of their n Achievement, as seen in Table 3. The aspiration boosting programme given alone, proved ineffective in producing change in n Achievement of Ss in E5-E6. The combined programme of the Brief Course in Achievement Motivation, and the aspiration boosting proved effective in showing greater change in Ss in E3-E4 than those in E2. The Brief Course in Achievement Motivation alone was also effective as predicted, in showing greater change in n Achievement in E2 than those who did not receive this programme. The comparition is limited

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[3] E2 received a brief course in achievement motivation i.e., T1: E5-E6 received aspiration boosting programme i.e., T2 and E3-E4 received both i.e., T1 + T2.

TABLE 3

MEAN CHANGE IN n ACHIEVEMENT

No.	Schools	N	Mean Change in n Ach	S.D.	Difference Between Schools	t	P
1.	E2	32	6.75	8.36	1 and 3	2.66	.005
2.	E3-E4	61	12.82	8.89	1 and 4	2.50	.01
3.	E5-E6	79	3.00	5.81	2 and 1	3.16	.005
4.	C1-C2	72	2.95	6.47	2 and 3	7.79	.0005
					2 and 4	7.25	.0005
					3 and 4		NS

by the fact that while other experimentals as well as controls were groups of two schools each, whereas E2 was left as a solitary school. There was greater possibility for teacher and/or school effect if any to operate in E2 than in other groups.

Change in n Achievement by SES

The Ss were classified as High, Middle and Low SES on the basis of fathers educational level, occupational status and income (Kuppuswamy, 1962). Out of those who were available for analyses, there was hardly any boy in High SES group. Most of the boys came from Middle SES and some from Low SES. The Low SES boys with-in each group of schools, as seen in Table 4, showed greater change in n Achievement than Middle SES boys. This was true both of the experimentals and the controls. This finding lent support to the results of a previous survey reported in study one, where the Low SES Ss showed greater n Achievement than those of Middle SES. Will Low SES Ss show greater change in their performance ?

TABLE 4

MEAN CHANGE IN n ACHIEVEMENT OF MIDDLE AND LOW SES BOYS IN EXPERIMENTAL AND CONTROL SCHOOLS

Schools	Low SES	Middle SES	P*
E2	D=13.67 n= 3	D=6.92 n=26	.005
E3-E4	D=15.79 n= 9	D=13.05 n=21	.08
E5-E6	D=5.29 n=21	D= 3.14 n=42	.10
C1-C2	D= 6.02 n=11	D= 3.87 n=39	.05

* The Mann Whitney one tailed U Test.

Change in School Performance

The Achievement Tests

The results at the annual examination showed, in some cases high and in some moderate, positive correlations with the results of the pre-test (October, 1965), as seen in Table 5. The annual examination results were therefore utilised as the second post test for the purpose of the analyses reported below.

The standardised post-tests were limited by the fact that the schools did not cover the same amout of the syllabus during the period of experimentation. Some teachers felt that the papers were too difficult for their pupils. The concerned teacher indicated on the test paper, whether or not a particular item was covered in his school. The propotions of the items on the

TABLE 5

CORRELATIONS BETWEENSCORES ON ACHIEVEMENT PRE-TESTS & MARKS AT THE ANNUAL EXAMINATION

Schools	Physics		Chemistry		Mathematics	
	N	r	N	r	N	r
E2	39	.62	39	.57	37	.53
E3	32	.63	33	-32	31	.75
E4	34	.21a	31	.26	32	.34
E5	39	.77	37	.89	41	.68
E6	44	.53	45	.83	43	.76
C1	10	.36	11	.90	11	.69
C2	38	.71	38	.71	39	.78

a. P ∠ 05 or less for all except marked.

test papers covered in each school at the time of the post-test (February 1966) are shown in Table 6. The scores on this test were comparable only for such schools which covered approximately an equal amount of course in the given subject. The annual examinations did not suffer from this limitation. Each school gave its own examination, presumably on the course taught. However the marks ontained at different school examinations were also not directly comparable. These limitations prevented meaningful combination of schools which received the same treatments. It was possible to compare such single schools only which were comparable in terms of courses covered by them in various subjects. The results obtained by the experimental and control schools in Physics, Chemistry and Mathematics at the pre-test, post-test (February 1966) and the annual examination (April 1966) are shown in Appendix Table 3 and 3a.

TABLE 6

SYLLABUS COVERED IN VARIOUS SUBJECTS IN TERMS OF THE ITEMS ON THE (IN %age) TEST PAPERS

School		Physics	Chemistry	Mathematics
Darbad	E2	77	88	69
Podar	E3	28	73	84
Khandelwal	E4	28	42	33
Jain Subodh	E5	73	67	64
Pareek	C1	77	44	31
Manak Chowk	C2	84	67	84

These data could not be obtained from E6.

In terms of the Courses covered, as shown by the information presented in Table 6, E2, E5, C1 and C2 were comparable in Physics; E2, E3, E5 and C2 in Chemistry and Mathematics and E4 and C1 in Chemistry and Mathematics. The mean change scores in performance at the February and April post-tests for the above comparable schools are shown in Table 7.

Between the Experimental and Controls, the Ss in E2 showed greater improvement in Physics than those in C1 (P ∠.0005) at the February post-tests which was reduced at the April Post-test (P ∠.10). E2 showed greater improvement in Physics than C2 also, at the Febiuary post test (P ∠.025) which was reversed in favour of C2 at the April test (P ∠.001). In other two subjects, i.e., Chemistry and Mathematics, C2 showed greater improvement than E2 at both the post tests (P ∠.01 & less).

The Ss in E4 showed greater improvement in Chemistry than those in C1 at both the post-tests ($P \angle .10$ less). In Mathematics also E4 showed greater achievement than C1 at both the post-tests but was statistically not significant at the April test.

With the Experimentals, E3 showed greater improvement in Chemistry at both the post tests ($P \angle .01$ or less) and in Mathematics at the February test ($P \angle .001$). E3 showed greater achievement in Chemistry than E5 at the February test which was reversed in favour of E5 at the April test. E2 showed greater achievement than E5 in Physics at the February test which was reversed in favour of E5 at the April test. E5 showed better results than E2 in Mathematics at the February test which was reduced to non-significance at the April test.

Considering the pre-test and the February post-test, the same semi-standardised tests, ten of the thirteen significant differences, as seen in Table 7 were produced in the direction of prediction, as hypothesised. Most of these differences either lost their significance or were reversed at the April annual examination. Out of ten significant differences at the April test, seven were contrary to prediction.

The erratic results, as reported above, could have been due to several factors: The pre and the February post tests were at the best semi-standardised which were further limited by the differences in courses covered during the period of experimentation by the concerned schools. The annual examination results in higher secondary schools in Rajasthan take into account the pupils' month to month work, This has greatly enhanced the value of these marks. The high correlations of these marks with the scores on the pre-test, to a certain extent, indicated this fact. Inspite of reforms, the school marking continues to be subjective and subject to errors. Besides the curedeness of the measures of school performance, the school and/or teacher effect, pupils' intelligence and his socio-economic background might have influenced the results reported above.

It was decided to control intelligence and the social class in further analyses. The classification of pupils by intelligence and social class invetibly considerably reduced the numbers in each school. In order to obtain minimum numbers for meaningful analyses and to reduce the school and/or teacher effect it was necessary to group similar Ss according the treatment received by them. In analyses for such combined groups it was not possible to use the incomparable raw marks obtained at the pre and post test. The raw marks obtained by each Ss at the pre-test, February post-test and the April examination were converted into standard scores with in each school, i.e., with reference to mean and SD of the concerned school.

The number of Ss in High SES was not adequate for analyses. The low and Middle SES Ss were grouped together treatment wise for respective experimental and control schools.

TABLE 7

MEAN CHANGE IN SCHOOL PERFORMANCE IN EXPERIMENTAL AND CONTROL SCHOOLS

Subject	From Pre-test Oct. 1965 to Post-test ~~Feb-March~~ 1966				Pre-test from Oct. 1965 Post-test April, 1966			
	Schools		t	Sig.	Schools		t	Sig
	E2	E3			E2	E3		
Chemistry	D= 3.39 n=38	D=16,41 n=34	4.39	.0005	D=22.15 n=39	D=32.06 n=33	2.41	.01
Maths.	D= 1.89 n= 37	D=11.18 n=22	3.06	.001	D=13.82 n=40	D=19.96 n=24	1.23	NS
	E2	E5			E2	E5		
Physics	D=14.05 n=39	D=4.74 n=39	4.34	.0001[a]	D=22.07 n=40	D=39.73 n=45	5.27	.001[a]
Chemistry	D= 3.39 n=38	D= 6.77 n=31	1.24	NS	D=22.15 n=39	D=41.34 n=38	8.40	.001[a]
Maths.	D= 1.89 n=37	D=7.88 n=41	3.01	.01[a]	D=18.82 n=40	D=24.86 n=25	1.54	NS
	E2	C2			E2	C2		
Physics	D=14.05 n=39	D=10.35 n=40	2.25	.025	D=22.07 n=40	D=36.80 n=39	5.77	.001[a]
Chemistry	D= 3.39 n=38	D=12.87 n=39	3.39	.01[a]	D=22.15 n=29	D=35.72 n=39	5.28	.001[a]
Maths	D= 1.89 n=37	D=14.43 n=40	4.09	.001[a]	D=18.82 n=40	D=36.36 n=39	4.77	.001[a]
	E2	C1			E2	C2		
Physics	D=14.05 n=39	D=3.05 n=37	5.28	.0005	D=22.07 n=40	D=18.50 n=12	1.59	.10

Contd.....

Table 7(contd.)

	E3	E5			E3	E5		
Chemistry	D=16.41 n=34	D= 6.77 n=31	3.21	.005	D=32.06 n=33	D=41.34 n=38	2.34	.02[a]
Maths.	D=11.18 n=22	D=7.88 n=41	1.45	NS	D=19.96 n=24	D=24.86 n=45	.95	NS
	E3	C2			E3	C2		
Chemistry	D=16.41 n=34	D=12.87 n=59	1.51	.10	D=32.06 n=33	D=35.72 n=39	.82	NS
Maths.	D=11.18 n=22	D=14.43 n=40	1.48	.10	D=19.96 n=24	D=36.36 n39	8.01	.001[a]
	E4	C1			E4	C1		
Chemistry	D=3.10 n=30	D=13.02 n=41	1.43	.10	D=37.15 n=34	D=30.75 n=12	1.85	.05
Maths.	D= .78 n=31	D=2.39 n=44	1.47	.10	D=24.20 n=35	D=21.42 n=12	1.42	NS

a. Two tailed test.

Effect of Social Class

The Low SES experimentals (three were too few Low SES in E2 for analysis) showed no greater changw in scores on February 1966 post-tests in Physcs, Chemistry and Mathematics than the Low SES controls. The former appeared to show greater change at the follow up April (1966) annual examination than the controls. The results presented in Table 8, showed greater change in performance of Physics and Mathematics for the Low SES boys in E3-E4 as well as E5-E6 than those in C1-C2. The Ss showed no difference in Chemistry performance.

The Low SES experimentals (Ss in E3-E4 and E5-E6) did not show significant difference in performance of any of the three subjects among themselves.

The Middle SES experimentals, except in one case, showed greater performance neither at the February post test nor at the April follow up examination, than the controls.

Change in School performance of Bright Under Achievers

The Bright Under Achievers

The Ss were split on the median score on the group test of intelligence as High (above the median) and Low (below the median). They were similarly split on the median (all schools combined) score on the pre-test in Physics, similarly in Chemistry and Mathematics.

TABLE 8

MEAN CHANGE IN SCHOOL PERFORMANCE BY SCHOOLS FOR LOW SES.[a]

Subjects	Pretest (Oct. 1965)	Post test (Feb. 1966)	P	Pretest (Oct., 1965)	Annual (April, 1966)	P *
	Schools		P	Schools		P *
	E3-E4	C1-C2		E-3-E4	C1=C2	
Physics	D=49.36 n=13	D=50.48 n=10	NS	D=49.51 n=13	D=45.11 n=12	.05
Chemistry	D=49.37 n=13	D=53.06 n=11	NS	D=51.92 n=12	D=50.10 n=12	NS
Maths	D=49.09 n=13	D=52.49 n=11	NS	D=52.40 n=14	D=48.96 n=12	.11
	E5-E6	C1-C2		E5-E6	C1-C2	
Physics	D=50.47 n=24	D=50.48 n=10	NS	D=51.36 n=24	D=45.11 n=12	.03
Chemistry	D=49.86 n=23	D=53.06 n=11	NS	D=50.97 n=22	D=50.10 n=12	NS
Maths	D=50.49 n=23	D=52.49 n=11	NS	D=51.72 n=23	D=48.98 n=12	.18
	E3-E4	E5-E6		E3-E4	E5-E6	
Physics	D=49.36 n=13	D=50.47 n=24	NS	D=49.51 n=13	D=51.36 n=24	NS
Chemistry	D=49.37 n=13	D=49.86 n=23	NS	D=51.92 n=12	D=50.97 n=22	NS
Maths	D=49.09 n=13	D=50.49 n=23	NS	D=52.40 n=14	D=51.72 n=23	NS

* Mann Whitney One Tailed U Test

[a] Standard scores used in these analyses.

TABLE 9

MEAN CHANGE IN SCHOOL PERFORMANCE BY SCHOOLS FOR MIDDLE SES.

	Pretest (Oct. 1965)			Post test (Feb. 1966)			Pretest (Oct, 1965)			Annual (April, 1966)		
Subject	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
		E3			E2			E3-E4			E2	
Physics	23	49.49	10.19	31	49.18	7.73	25	51.72	9.48	33	51.86	5.56
Chemistry	24	49.66	11.84	31	52.43*	4.93	25	49.39	6.18	32	50.87	10.30
Maths	19.	50.98	15.68	31	46.42	10.97	21	49.86	10.18	33	50.34	10.24
		E3-E4			E5-E6			E3-E4			E5-E6	
Physics	23	49.49	10.19	44	50.16	3.88	25	51.72	9.48	46	51.65	7.97
Chemistry	24	49.66	11.84	40	48.59*	3.95	25	49.39	6.18	44	49.64	11.63
Maths	19.	50.98	15.68	45	48.66	14.79	21	49.86	10.18	46	51.28	4.71
		E3-E4			C1-C2			E3-E4			C1-C2	
Physics	23	49.49	10.19	30	51.38	8.76	25	51.72	9.48	32	51.28	8.96
Chemistry	24	49.66	11.84	31	48.34	13.37	25	49.39	6.18	32	49.71	10.68
Maths	19	50.98	15.68	31	49.95	9.05	21	49.86	10.18	32	49.96	9.94

Contd.....

TABLE 9(Contd)

Subject	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
		E2			E5-E6			E2			E5-E6	
Physics	31	49.18	7.73	44	50.16	8.88	33	51.86	5.56	46	51.62	7.97
Chemistry	31	52.43*	4.93	40	48.59*	8.95	32	50.87	10.30	44	49.64	11.39
Maths	31	46.62	10.97	45	48.66	14.79	33	50.34	10.24	46	51.28	4.71
		E2			C1-C2			E2			C1-C2	
Physics	31	49.18	7.73	30	51.38	8.76	33	51.86	5.56	32	51.28	8.96
Chemistry	31	52.43	4.93	31	48.34	13.37	32	50.37	10.30	32	49.71	10.68
Maths	31	46.42	10.97	31	49.95	9.05	33	50.34	10.34	32	49.96	9.94
		E5-E6			C1-C2			E5-E6			C1-C2	
Physics	44	50.16	8.88	30	51.38	8.76	46	51.62	7.97	32	51.28	8.96
Chemistry	40	48.59*	8.95	31	48.34	13.37	44	49.64	11.39	32	49.71	10.68
Maths	45	48.66	14.79	31	49.95	9.05	46	51.28	4.71	32	49.96	9.94

* This difference is significant at .05. All other difference not significant

The Ss High on intelligence and Low on Physics test formed bright under-achievers in Physics. The bright under-achievers in Chemistry and Mathematics were obtained similarly.

The Change in n Achievement of Bright Under Achievers

The bright under-achieving experimental and controls showed the same trends of change in n Achievement as were shown by the combined groups (Table 3). The bright under-achievers in E3-E4 as seen in Table 10 showed greater change in n Achievement than those in E2; E5-E6 and C1-C2. Those in E2 showed greater change than those in E5-E6 and C1-C2 and the last two groups showed no difference.

Improvement in School Performance

The bright under-achievers in E2; E3-E4; E5-E6 showed no greater improvement in school performance at Physics, Chemistry and Mathematics than the bright under-achieving controls at the February post-test. The former (i.e. the experimentals) started showing greater improvement, as seen in Table 11, than the controls at the April examination. The bright under-achievers in E3-E4 showed somewhat greater change than the controls ($P < .20$) in Chemistry and in no other subject. Those in E2 showed greater change in performance of Physics than the controls ($P < .10$) and in no other subject. The bright under-achievers in E5-E6 showed greater improvement in Physics than the controls ($P < .05$) and in no other subjects.

TABLE 10

MEAN CHANGE IN n ACHIEVEMENT OF BRIGHT UNDER ACHIEVERS BY SCHOOLS

Schools	Groups	Mean change in n Achievement		P^a
1	2	1	2	
E2	E3-E4	D=10.16 n=6	D=14.07 n=14	.01
E2	E5-E6	D=10.16 n= 6	D= 4.00 n=17	.01
E2	C1-C2	D=10.16 n= 6	D= 3.31 n=19	.01
E3-E4	E5-E6	D=14.07 n=14	D= 4.00 n=17	.01
E3-E4	C1-C2	D=14.07 n=14	D= 3.31 n=19	.01
E5-E6	C1-C2	D= 4.00 n=17	D= 3.31 n=19	NS

a. Mann Whitney one tailed U test.

The bright under-achieving experimentals showed no differences among themselves, as seen in Table 11, at their performance from the February post-test certain differences appeared at the April examination. Those in E3-E4 showed somewhat greater improvement in Chemistry than those in E2 ($P < .20$). The bright under-achievers in E2 and E5-E6 showed no differences at the April examination as well. The latter i.e., those in E5-E6 showed greater improvement in Physics, contrary to prediction ($P < .10$) than those in E3 and E4.

Effect of Social Class

The Low SES bright under-achieving experimentals and controls showed equal change in performance at the February post.test. The Low SES bright underachievers in E3-E4 started showing greater improvement in their performance in Physics, Chemistry and Mathematics

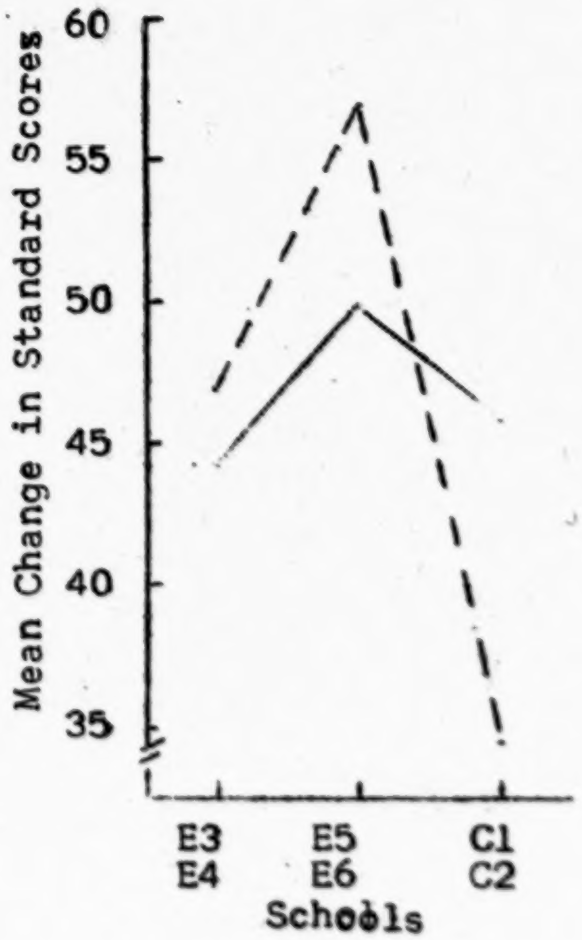

Fig.1 MEAN CHANGE
IN PHYSICS

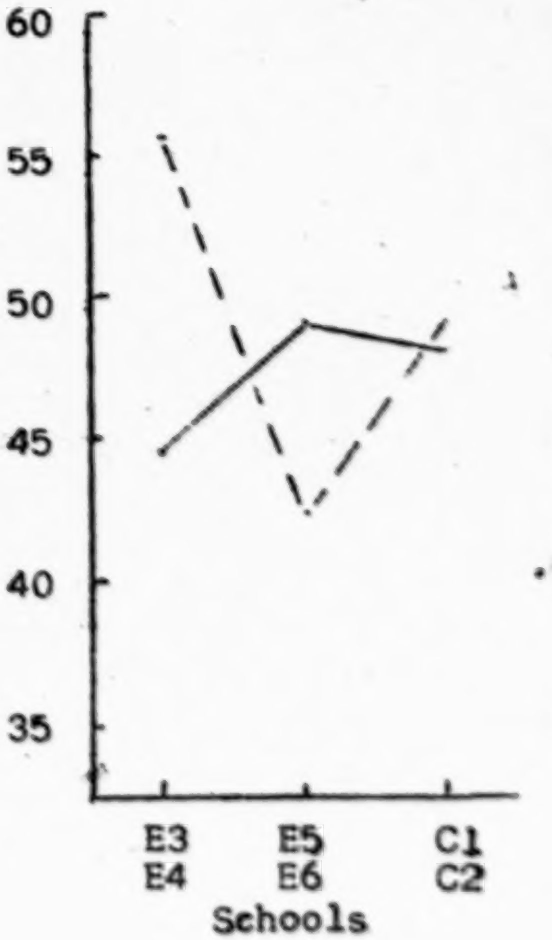

Fig.2 MEAN CHANGE
IN CHEMISTRY

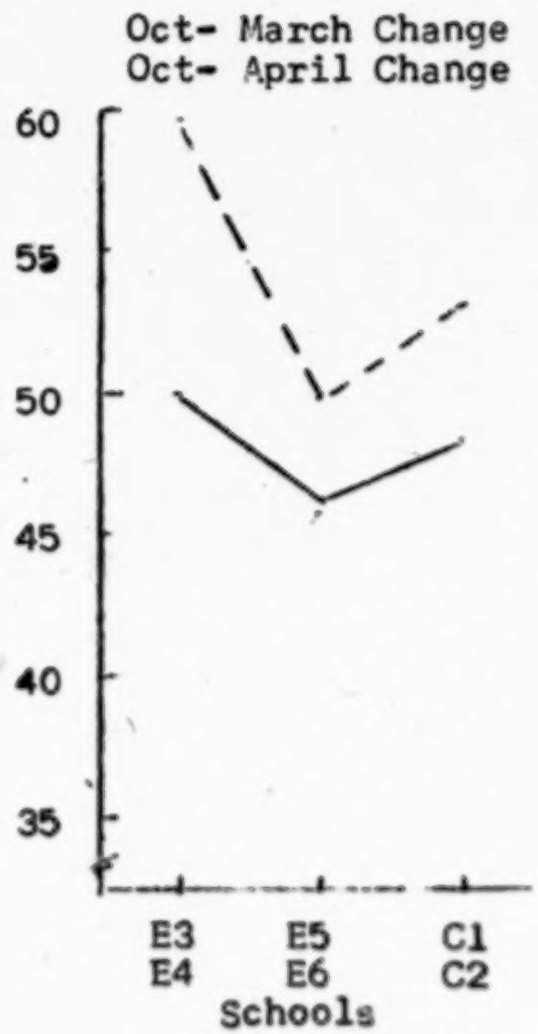

Fig.3 MEAN CHANGE
IN MATHEMATICS

Mean Change in School Performance of Bright Under-Achievers in Experimental and Control School by Fathers Low Socio-Economic Status

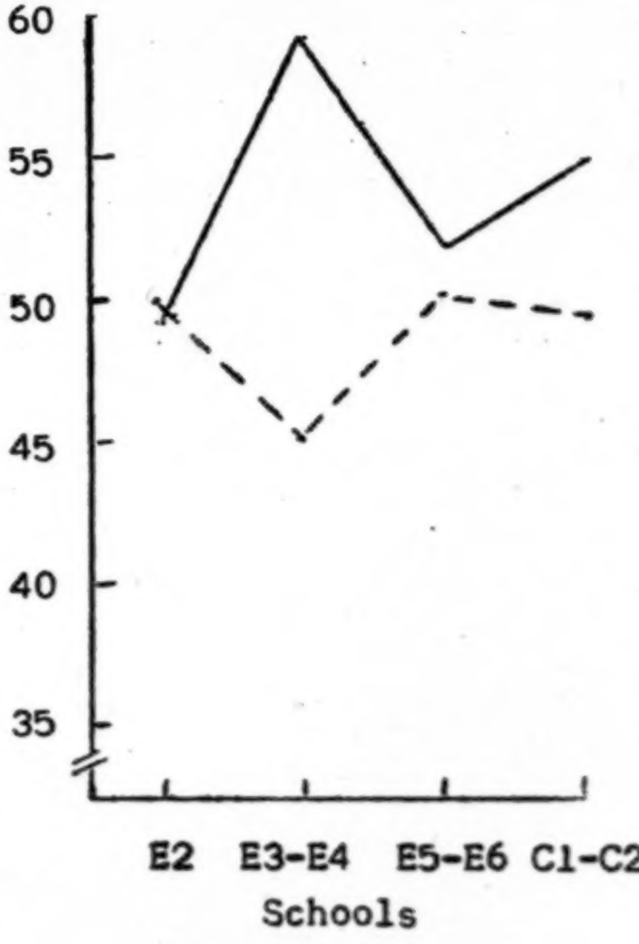

Fig.4 MEAN CHANGE IN PHYSICS

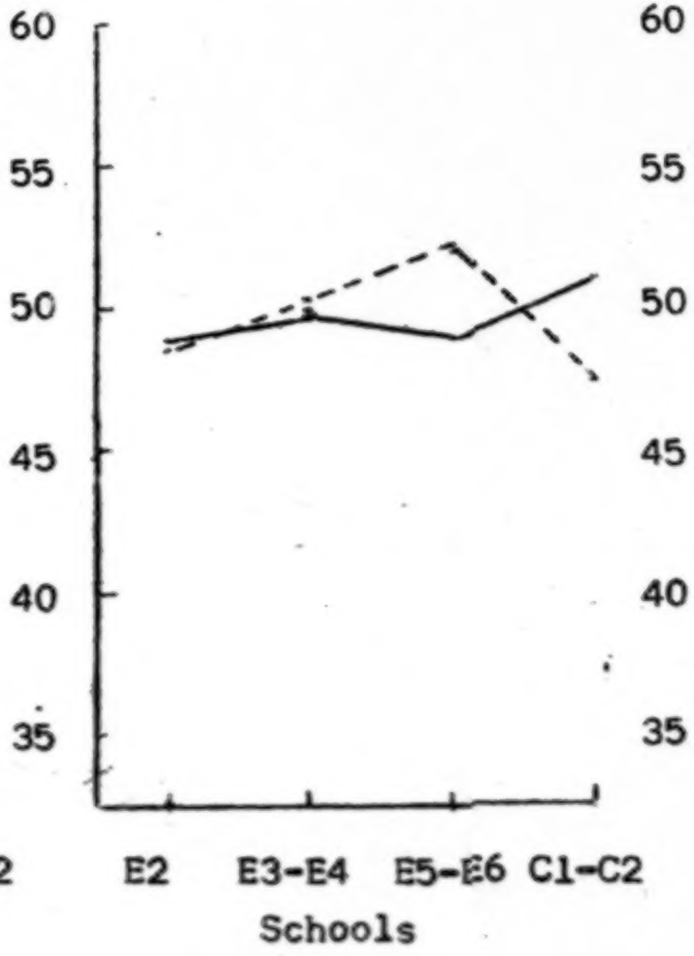

Fig.5 MEAN CHANGE IN CHEMISTRY

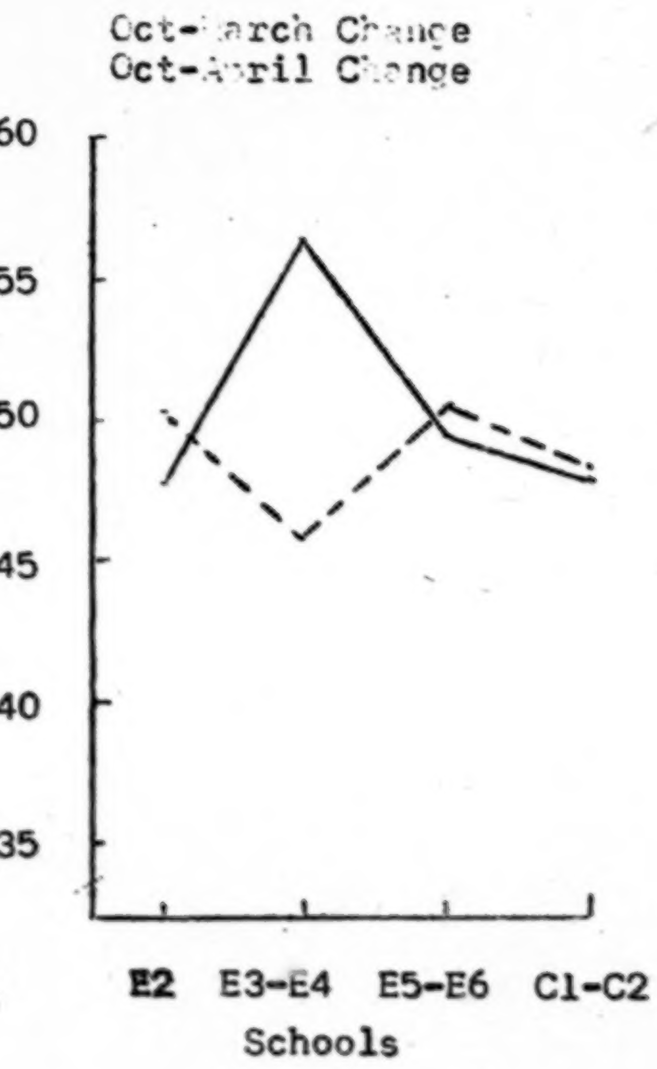

Fig.6 MEAN CHANGE IN MATHEMATICS

Mean Change in School Performance of Bright Under-Achievers in Experimental and Control School by Fathers Middle Socio-Economic Status than the controls, at the April Examination. The Low SES bright under-achievers in E5-E6 showed greater improvement in Physics than the controls, and failed to show it in Chemistry and Mathematics.

The Low SES in E3-E4 showed greater improvement in performance of Chemistry and Mathematics (at .20 level), as predicted, than those in E5-E6. The latter showed greater improvement in Physics than those in E3-E4, as seen in Table 12.

The Middle SES experimental except in one case showed greater improvement than the controls neither at February post test nor at the follow up April examination. The Ss in E3-E4 showed greater change in Mathematics performance, as seen in Table 13, than the controls at the February post-test, which could not be sustained at the April examination.

Discussion

Differences in Courses covered by different schools during the four months period of experimentation and different tests given by different schools at the annual examination imposed limitation on the obtained results. The February post-test did reveal greater improvement in performance of experimental than the controls, in several case, thus, lending support to the hypotheses. These improvement trends were however reversed in most of th cases, at the April examination. The trends were therefore unclear. The results became clearer when the Ss in respective treatment groups, were classified by their SES. The Low SES experimental

TABLE 11

MEAN CHANGE IN SCHOOL PERFORMANCE OF BRIGHT UNDER ACHIEVERS IN EXPERIMENTAL AND CONTROL SCHOOLS

From Protesting Oct. 1965 to post test Feb-March, 1966				Protesting for Oct. 1965 to Posttesting April, 1966.		
Subjects	Schools		Sig	Schools		Sig
	E2	E3-E4		E2	E3-E4	
Physics	D=49.13 n= 8	D=48.72 n=14	NS	D=50.40 n= 8	D=47,20 n=15	NS
Chemistry	D=48.43 n= 8	D=49.56 n=16	NS	D=48.09 n= 8	D=52.10 n=11	.20
Maths	D=47.81 n= 8	D=52. 8 n=13	NS	D=50.22 n= 8	D=53.19 n= 9	NS
	E2	E5-E6		E2	E5-E6	
Physics	D=49.13 n= 8	D=51.81 n=18	NS	D=50.40 n= 8	D=52.64 n=17	NS
Chemistry	D=48.43 n= 8	D=48.20 n=16	NS	D=48.09 n= 8	D=49.86 n=13	NS
Maths	D=47.81 n = 8	D=48.68 n = 18	NS	D=50.22 n = 8	D=50.40 n = 15	NS
	E2	C1-C2		E2	C1-C2	
Physics	D=49.13 n= 8	D=50.69 n=21	NS	D=50.40 n= 8	D=46.19 n=14	.10
Chemistry	D=48.43 n= 8	D=51.08 n=20	NS	D=48.09 n= 8	D=48.02 n=12	NS
Maths	D=47.81 n= 8	D=48.50 n=18	NS	D=50.22 n= 8	D=31.45 n=12	NS

Contd.....

TABLE 11

	E3-E4	E5-E6		E3-E4	E5-6	
Physics	D=48.72 n=14	D=51.81 n=18	NS	D=47.20 n=15	D=52.64 n=17	.05
Chemistry	D=49.56 n=16	D=48.20 n=16	NS	D=52.10 n=11	D=49.86 n=13	NS
Maths	D=52.88 n=13	D=48.68 n=18	NS	D=53.19 n= 9	D=50.40 n=15	NS
	E_3-E4	C_1-C2		E_3-E4	C_1-C2	
Physics	D=48.72 n=14	D=50.69 n=21	NS	D=47.20 n=15	D=46.19 n=14	NS
Chemistry	D=49.56 n=16	D=51.08 n=20	NS	D=52.10 n=11	D=48.02 n=12	.20
Maths	D=52.88 n=13	D=48.50 n=18	NS	D=53.19 n= 9	D=51,45 n=12	NS
	E5-E6	C1-C2		E5-E6	C1-C2	
Physicis	D=51.81 n=18	D=50.69 n=21	NS	D=52.64 n=17	D=46.19 n=24	.05
Chemistry	D=48.20 n=16	D=51.08 n=20	NS	D=49.86 n=13	D=48.02 n=12	NS
Maths	D=48.68 n=18	D=48.50 n=18	NS	D=50.40 n=15	D=51.45 n=12	NS

TABLE 12

MEAN CHANGE IN SCHOOL PERFORMANCE OF BRIGHT UNDER ACHIEVERS IN EXPERIMENTAL AND CONTROL SCHOOL BY FATHERS LOW SOCIO ECONOMIC STATUS

From pretesting Oct, 1965 to Post test Feb, March, 1966				Pretesting Oct. 1965 to Posttesting April, 1966		
Subjects	Schools		Sig	Schools		Sig
	E3-E4	C1-C2		E3-E4	C1-C2	
Physics	D=44.12 n=4	D=46.86 n=4	NS*	D=47.52 n=4	D=34.40 n=3	.02
Chemistry	D=44.73 n=4	D=48.86 n=4	NS	D=56.06 n=4	D=49.68 n=3	.20
Maths	D=50.18 n=4	D=48.48 n=4	NS	D=59.24 n=4	D=53.10 n=3	.11
	Schools			Schools		
	E5-E6	C1-C2		E5-E6	C1-C2	
Physics	D=49.95 n=5	D=46.86 n=4	NS	D=57.00 n=4	D=34.40 n=3	.02
Chemistry	D=49.67 n=4	D=48.06 n=4	NS	D=42.48 n=3	D=49.68 n=3	NS
Maths	D=46.95 n=5	D=48.48 n=3	NS	D=49.98 n=4	D=53.10 n=3	NS
	Schools			Schools		
	E3-E4	E5-E6		E3-E4	E5-E6	
Physics	D=44.12 n=4	D=49.95 n=5	NS	D=47.52 n=4	D=57.00 n=4	.02
Chemistry	D=44.73 n=4	D=49.67 n= 4	NS	D=56.06 n= 4	D=42.48 n= 3	.02
Maths	D=50.18 n= 4	D=46.95 n= 5	NS	D=59.24 n= 4	D=49.98 n= 4	.20

NOTE: The number of Low SES bright under achiever in E2 not enough for analysis; standard scores used in the analysis

a. Mann Whitney U Test

b. a two tailed U test

TABLE 13

MEAN CHANGE IN SCHOOL PERFORMANCE OF BRIGHT UNDER ACHIEVERS IN EXPERIMENTAL AND CONTROL SCHOOLS BY FATHERS MIDDLE SOCIO ECONOMIC STATUS

	Pretesting (Oct.,1965 to Feb-March 1966)			Pretesting (Oct. 1965 to April, 1966).		
Subjects	Schools		Pa	Schools		Pa
	E2	C1-C2		E2	C1-C2	
Physics	D=49.12 n= 8	D=54.90 n=10	NS	D=50.04 n= 8	D=49.12 n= 9	NS
Chemistry	D=48.43 n= 8	D=51.22 n=10	NS	D=48.09 n= 8	D=47.47 n= 9	NS
Maths	D=47.82 n= 8	D=47.95 n= 9	NS	D=50.22 n= 3	D=50.91 n= 9	NS
	Schools			Schools		
	E3-E4	C1-C2		E3-E4	C1-C2	
Physics	D=58.71 n= 5	D=54.90 n=10	NS	D=45.12 n= 5	D=49.12 n= 9	NS
Chemistry	D=49.83 n= 4	D=51.22 n=10	NS	D=50.62 n= 5	D=47.47 n= 9	NS
Maths	D=56.54 n= 4.	D=47.95 n= 9	.05	D=45.80 n= 5	D=50.91 n= 9	NS
	Schools			Schools		
	E5-E6	C1-C2		E5-E6	C1-C2	
Physics	D=52.51 n=12	D=54.90 n=10	NS	D=50.88 n= 5	D=49.12 n= 9	NS
Chemistry	D= 48.54 n=11	D=51.22 n=10	NS	D=52.82 n=10	D=47.47 n= 9	NS
Maths	D=49.21 n=12	D=47.95 n= 9	NS	D=50.56 n=11	D=50.91 n= 9	NS

Contd......

TABLE 13 (Contd)

	Schools			Schools		
	E2	E3-E4		E2	E3-E4	
Physics	D=49.12 n= 8	D=48.71 n= 5	NS	D=50.04 n= 8	D=45.12 n= 5	NS
Chemistry	D=43.43 n= 8	D=49.83 n= 4	NS	D=48.09 n= 8	D=50.62 n= 5	NS
Maths	D=47.82 n= 8	D=56.64 n= 4	NSb	D=50.22 n= 8	D=45.50 n= 5	NS

	Schools			Schools		
	E2	E5-E6		E2	E5-E6	
Physics	D=49.12 n= 8	D=52.51 n=11	NS	D=50.04 n= 8	D=50.88 n=13	NS
Chemistry	D=48.43 n= 8	D=48.54 n=11	NS	D=48.09 n= 8	D=52.82 n=10	NS
Maths	D=47.82 n= 8	D=49.21 n = 11	NS	D=50.22 n= 8	D=50.56 n=11	NS

	Schools			Schools		
	E3-E4	C1-C2		E3-E4	C1-C2	
Physics	D=48.71 n= 5	D=52.51 n=12	NS	D=45.12 n= 5	D=50.88 n=13	NS
Chemistry	D=49.83 n= 4	D=48.54 n=11	NS	D=50.62 n= 5	D=52.82 n=10	NS
Maths	D=56.54 n= 4	D=49.21 n=12	NS	D=45.80 n= 5	D=50.56 n=11	NS

a. Mann Whitney one tailed U test
b. a two tailed test.

showed no difference in performance with the Low SES controls at the February post-test. The former revealed significantly greater improvement than the controls, at the April follow up examination. The middle SES experimentals and controls showed difference neither at the February not at the April test. The above trends became still more clearer for the Low SES bright under-achievers in E3-E4 (both treatment combined) who uniformly showed greater improvement in Physics, Chemistry and Mathematics than the controls at the April Follow-up examination. The Low SES bright under-achievers in E5-E6 showed greater improvement than the controls at the April test, only in Physics. These in E3-E4 showed greater improvement than the Low SES bright under-achievers in E5-E6 at the April post test in Chemistry and Mathematics. This was reversed in case of Physics, in favour of E5-E6. The middle SES Ss showed no such trends.

The results indicated that teaching achievement motivation characteristics alongwith goal setting in classrooms enabled the Low SES bright under-achievers to improve their performance at the annual examination which came two months after the experimental programmes were over. The Low SES experimentals also showed greater gain in *n* Achievement than their middle SES counter parts, with in each group. The results in the present experiment were opposite of those obtained by Kolb (1965) in
different kind of experiment. Kolb Kavqub characteri*
*stics of persons
somewhat/with high *n* Achievement, to bright under-achievers attending a summer coaching camp. He found the High SES experimental showing greater improvement in academic performance. In an earlier Survey (Study One)

the Low SES Ss were found to have higher level of n Achievement than those with Middle SES. In the present study it was the Low SES bright under-achieving experimentals who showed greater improvement in academic performance than the Low SES controls. The Middle SES Ss under-achievers did not show this difference. The teaching of characteristics of n Achievement and goal setting in classrooms appeared to have helped the Low SES experimental than those with Middle SES in raising academic performance. The experimental programme seemed to have high-lighted the need to remove under-achievement in the Low SES bright under-achievers. The High and Middle social class section are traditionally known to prize education and achievement more than the Low SES sections. Have the Low SES sections of our society started to value education and good performance more than the Middle SES section? No data were available in the present study to answer this question.

This results provided support to the hypothesis that teaching of characterisitcs of persons with high n Achievement can produce improvement in academic performance of the under-achieving high schools boys. The results further supported the hypothesis that this can be done by regular classroom programme given by teachers trained in achievement motivation. The results showed that a combined programme of achievement motivation and goal setting was more effective than mere goal setting programme.

The appearance of significant differences of improvement of experimentals over controls at the April examination suggested that the impact of classroom achievement motivation programme is more likely to be felt later than immediately after the programme. The findings therefore suggest that the impact of the experimental programmes with the present boys may increase in later follow up studies.

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APPENDIX TABLE I

Participants' Achievement Motive Score Before and After the Motivation Training Programme

Teacher Code No.			Categories			Sub-categories											Score	Total Gain
		UI	TI	AI	N	I+	I?	I-	Ga+	Ga-	BP	Bw	Nup	G+	G-	Th		
1.1	Before	3	2	1	-	1	-	-	1	-	-	-	-	-	-	1	1	33
	After	-	-	6	5	5	-	-	-	-	1	3	1	6	1	6	34	
1.2	Before	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	0	28
	After	-	1	5	5	5	-	-	1	-	1	2	2	5	-	2	28	
1.3	Before	1	3	2	2	-	2	-	-	-	-	-	-	-	-	1	6	20
	After	-	-	6	5	5	-	-	3	-	-	-	-	1	-	6	26	
1.4	Before	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	2	24
	After	-	-	5	5	5	-	-	-	-	-	-	1	5	-	5	26	
2.1	Before	2	2	2	1	2	2	-	-	-	-	-	-	-	-	2	5	37
	After	-	-	6	6	6	-	-	-	-	5	-	6	6	1	6	42	
2.2	Before	1	3	2	-	2	-	-	-	-	-	-	1	-	-	2	6	15
	After	-	-	5	3	5	-	-	-	-	-	-	-	3	-	5	21	
3.1	Before	-	5	1	1	-	1	-	-	-	-	-	-	-	-	-	3	26
	After	-	-	5	4	5	-	-	4	-	-	-	1	5	-	5	29	
3.2	Before	3	2	1	1	-	-	-	-	-	-	-	-	-	-	1	0	33
	After	-	-	6	5	6	-	-	2	-	2	1	1	6	-	4	33	
3.3	Before	-	3	3	2	1	2	-	-	-	-	1	-	-	-	3	12	16
	After	-	-	6	4	5	-	-	5	-	-	-	-	3	-	5	28	
3.4	Before	3	-	3	2	2	1	-	1	-	-	-	-	-	-	3	9	24
	After	-	-	6	5	6	-	-	1	-	-	-	3	6	-	6	33	
3.5	Before	1	2	3	3	-	2	-	1	-	-	-	-	-	-	-	8	33
	After	-	-	6	5	5	-	-	6	-	1	3	3	5	1	6	41	

APPENDIX TABLE 2

MEASURES OF CENTRAL TENDENCY IN RESPECT OF n Ach I, n Ach II & CHANGE IN n Ach

School	n Ach I				n Ach II				Change in n Ach			
	N	Mean	Mdn.	S.D.	N	Mean	Mdn.	S.D.	N	Mean	Mdn.	S.D.
E 2	40	6.50	7.50	7.65	32	13.65	14.50	8.02	32	6.75	6.86	8.36
E 3	35	7.43	5.50	7.61	31	17.45	19.75	8.35	31	10.42	10.08	9.14
E 4	36	3.64	3.50	5.83	30	19.50	20.17	9.67	30	15.31	14.56	8.64
E 5	45	4.67	4.18	6.35	34	6.59	6.35	7.45	34	2.41	0.50	6.28
E 6	48	3.08	1.28	7.42	45	6.56	6.33	6.92	45	3.45	4.42	5.43
C 1	45	0.57	0.00	4.32	34	2.61	1.84	5.92	34	2.86	2.47	4.99
C 2	40	3.75	7.08	5.12	38	7.05	7.00	8.65	38	3.13	3.41	7.55
Total	289	4.09	3.15	6.78	244	9.99	9.50	9.73	244	5.89	4.22	8.43

APPENDIX TABLE 3

MEAN AND S. D. OF PRE_TESTS AND POST TESTS BY SUBJECTS FOR SCHOOLS

School	Code No.	Pre-test N	Pre-test Mean	Pre-test S. D.	Post-test N	Post-test Mean	Post-test S. D.
PHYSICS							
Darbar	E2	40	11.23	3.54	39	24.85	10.67
Podar	E3	30	19.00	8.27	33	29.97	16.22
Khandelwal	E4	35	11.37	3.68	34	15.71	3.59
Jain Subodh	E5	45	14.29	5.84	39	19.08	12.64
Agarwal	E6	48	13.23	4.88	46	14.65	6.25
Pareek	C1	42	10.02	3.88	38	13.55	4.01
Manak Chowk.	C2	41	12.32	4.25	39	22.64	11.00
Total		281	12.89	5.51	268	19.95	10.92
CHEMISTRY							
Darbar	E2	39	16.34	4.44	39	19.67	11.26
Podar	E3	35	12.03	4.45	34	28.94	12.79
Khandelwal	E4	34	8.50	3.69	32	11.50	6.44
Jain Suboth	E5	38	19.89	5.37	37	24.00	10.44
Agarwal	E6	48	8.17	3.49	46	14.54	7.38
Pareek	C1	45	7.07	2.66	41	10.39	3.80
Manak Chowk	C2	41	13.32	6.09	39	28.20	12.47
Total		280	12.06	6.28	268	19.12	11.76

Contd....

MATHEMATICS

Darbar	E2	40	11.37	4.53	37	13.03	6.93
Podar	E3	25	16.72	3.65	32	26.37	16.50
Khandelwal	E4	35	7.51	2.45	32	6.66	3.63
Jain Subodh	E5	45	7.42	2.32	41	14.75	8.99
Agarwal	E6	49	9.73	10.56	44	10.73	5.09
Pareek	C1	13	6.46	2.13	12	3.25	2.45
Manak Chowk	C2	40	10.03	4.28	40	23.75	12.43
Total		247	9.84	6.29	238	15.40	11.96

APPENDIX TABLE 3a

MEAN AND S.D. OF SCHOOL FINAL EXAMINATION MARKS BY SCHOOLS

School	No.	Physics		Chemistry		Mathematics	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
E2	40	33.30	12.30	37.90	10.64	30.55	15.03
E3	33	62.70	20.83	44.09	8.34	33.97	21.84
E4	36	43.64	9.34	45.97	11.24	31.36	10.23
E5	45	54.02	15.27	60.73	11.25	32.31	20.83
E6	46	40.35	15.95	40.09	16.47	34.98	16.56
C1	12	28.50	9.35	38.33	9.43	28.00	16.47
C2	39	49.21	11.38	49.41	13.26	45.69	13.61

APPENDIX II

Aspirations Boosting Programme

Decisions taken by the concerned teachers for the implementation of this programme in their respective section of class IX.

It was decided to implement the programme as follows:

November 1965

2nd Week

1. Feedback on the Psychological and objective achievement tests to pupils and their parents.
2. Overall feedback to teachers with information about individual pupils
3. Teacher talk on results based on the above information.

3rd Week

1. Classroom achievement testing by teachers of respective subjects of the experimental class keeping in view the following points:
    - i) The test should be objective type as far as possible.
    - ii) The maximum marks should be 50
    - iii) The test should be of 30 mts. duration.
    - iv) the test should cover the syllabus taught from the beginning of the current year to date.

4th Week

1. Teachers will examine the test copies and write appropriate evaluation statements on each script.
2. The Progress Record from will be completed by the selected teachers for each pupil.

December 1965

1st Week	The unfinished task under 4th week of November would be completed.
2nd Week	1. Feedback on the achievement tests to pupils and their parents through the progress record. 2. Overall feedback to teachers 3. Teachers talk on results 4. Goal setting by pupils.
3rd Week	Same as under 3rd week of November, except that the test will cover only the topic taught during the past four weeks.
4th Week	Same as under 4th week of November.

January 1966

1st Week	Same as under last week of December,1965.
2nd Week	Same as under 2nd week of December, 1965.
3rd Week	Same as under 3rd week of November, 1965. except that the test would cover topics taught during the past four weeks(i.e., from 3rd week of December, 1965 to second week of January 1966).
4th Week	Same as under 4th week of November, 1965.

February 1966

1st Week	Same as under 1st week of December, 1965.
2nd Week	Same as under 2nd week of December, 1965.
3rd Week	Same as uder 3rd week of November, 1965 except that the test should cover topics taught during the 4 months period (i.e.,from November, 1965 to February 1966).
4th Week	Same as under 4th week of November, 1965.

March 1966

1st Week	1. Feedback to pupils and their parents. 2. Teachers talk on results
2nd Week	Achievement Retesting in all the schools in the Experimental Programme I and II.

APPENDIX III DPF MTM-F 026

MOTIVATION TRAINING FOR EDUCATIONAL DEVELOPMENT

PROGRESS RECORD

Name of the Student..............................Age................

Father's Name...

Class.....................Section.........Subjects 1................

School........................... .2...........3.............

Teacher in-charge........................... 4...........5.............

s test on	Subject	Student's actual score	Class Average score	Goal set by the Student for the next class test		Comments by the Teacher	Father's/Guardian's Comments on students performance
				Score	Rank		